

SEQUENCE LISTING



<110> Corvas International , Inc.  
 Vlasuk, George Phillip  
 Stanssens, Patrick Eric Hugo  
 Messens, Joris Hila Lieven  
 Lauwereys, Marc Josef  
 Laroche, Yves Rene  
 Jespers, Laurent Stephane  
 Gansemans, Yannick Georges Jozef  
 Moyle, Matthew  
 Bergum, Peter W.

<120> NEMATODE-EXTRACTED SERINE PROTEASE INHIBITORS AND ANTICOAGULANT  
 PROTEIN

<130> 018813/0272487

<140> 09/498,556

<141> 2000-04-02

<150> 08/809,455

<151> 1997-04-17

<150> PCT/US95/13231

<151> 1995-10-17

<150> 08/486,399

<151> 1995-06-05

<150> 08/486,397

<151> 1995-06-05

<150> 08/465,380

<151> 1995-06-05

<150> 08/461,965

<151> 1995-06-05

<150> 08/326,110

<151> 1994-10-18

<160> 357

<170> PatentIn version 3.1

<210> 1  
 <211> 234  
 <212> DNA  
 <213> Ancylostoma caninum

<400> 1

```
aaggcatacc cggagtgtgg tgagaatgaa tggctcgacg actgtggaac tcagaagcca      60
tgcgaggcca agtgcaatga ggaaccccct gaggaggaag atccgatatg ccgctcacgt      120
ggttgtttat tacctcctgc ttgcgtatgc aaagacggat tctacagaga cacggtgatc      180
ggcgactgtg ttagggaaga agaatgcgac caacatgaga ttatacatgt ctga          234
```

<210> 2  
 <211> 228  
 <212> DNA  
 <213> Ancylostoma caninum

<400> 2

```
aaggcatacc cggagtgtgg tgagaatgaa tggctcgacg tctgtggaac taagaagcca      60
tgcgaggcca agtgcaatga ggaagaggag gaagatccga tatgccgatc attttcttgt      120
ccgggtcccg ctgcttgcgt atgcgaagac ggattctaca gagacacggt gatcggcgac      180
tgtgttaagg aagaagaatg cgaccaacat gagattatac atgtctga          228
```

<210> 3  
 <211> 461  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (22)..(321)

<220>  
 <221> misc\_feature  
 <223> AcaNAPs cDNA sequence

<400> 3

```
gaattccgct actactcaac a atg aag atg ctt tac gct atc gct ata atg      51
                        Met Lys Met Leu Tyr Ala Ile Ala Ile Met
                        1           5           10
ttt ctc ctg gta tca tta tgc agc gca aga aca gtg agg aag gca tac      99
Phe Leu Leu Val Ser Leu Cys Ser Ala Arg Thr Val Arg Lys Ala Tyr
                        15           20           25
```

```

ccg gag tgt ggt gag aat gaa tgg ctc gac gac tgt gga act cag aag      147
Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Asp Cys Gly Thr Gln Lys
      30                      35                      40
cca tgc gag gcc aag tgc aat gag gaa ccc cct gag gag gaa gat ccg      195
Pro Cys Glu Ala Lys Cys Asn Glu Glu Pro Pro Glu Glu Glu Asp Pro
      45                      50                      55
ata tgc cgc tca cgt ggt tgt tta tta cct cct gct tgc gta tgc aaa      243
Ile Cys Arg Ser Arg Gly Cys Leu Leu Pro Pro Ala Cys Val Cys Lys
      60                      65                      70
gac gga ttc tac aga gac acg gtg atc ggc gac tgt gtt aga gaa gaa      291
Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val Arg Glu Glu
      75                      80                      85                      90
gaa tgc gac caa cat gag att ata cat gtc t gaacgagaaaa gcaacaataa cc      344
Glu Cys Asp Gln His Glu Ile Ile His Val
      95                      100
aaaggttcca actctcgctc tgcaaaatcg ctagttggat gtctcttttg cgtccgaata      404

gttttagttg atgttaagta agaactcctg ctggagagaa taaagctttc caactcc      461

```

```

<210> 4
<211> 77
<212> PRT
<213> Ascyclostoma caninum

```

```

<400> 4

```

```

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Asp
1                      5                      10
Cys Gly Thr Gln Lys Pro Cys Glu Ala Lys Cys Asn Glu Glu
15                      20                      25
Pro Pro Glu Glu Glu Asp Pro Ile Cys Arg Ser Arg Gly Cys
      30                      35                      40
Leu Leu Pro Pro Ala Cys Val Cys Lys Asp Gly Phe Tyr Arg
      45                      50                      55
Asp Thr Val Ile Gly Asp Cys Val Arg Glu Glu Glu Cys Asp
      60                      65                      70
Gln His Glu Ile Ile His Val
      75

```

```

<210> 5
<211> 455
<212> DNA
<213> Ancylostoma caninum

```

```

<220>
<221> CDS
<222> (22)..(315)

```

```

<220>
<221> misc_feature
<223> AcaNAP6 cDNA sequence

```

<400> 5

```

gaattccgct actactcaac a atg aag atg ctt tac gct atc gct ata atg      51
                        Met Lys Met Leu Tyr Ala Ile Ala Ile Met
                        1          5          10
ttt ctc ctg gtg tca tta tgc agc aca aga aca gtg agg aag gca tac      99
Phe Leu Leu Val Ser Leu Cys Ser Thr Arg Thr Val Arg Lys Ala Tyr
                        15          20          25
ccg gag tgt ggt gag aat gaa tgg ctc gac gtc tgt gga act aag aag      147
Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Val Cys Gly Thr Lys Lys
                        30          35          40
cca tgc gag gcc aag tgc agt gag gaa gag gag gaa gat ccg ata tgc      195
Pro Cys Glu Ala Lys Cys Ser Glu Glu Glu Glu Glu Asp Pro Ile Cys
                        45          50          55
cga tca ttt tct tgt acg ggt ccc gct gct tgc gta tgc gaa gac gga      243
Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys Glu Asp Gly
                        60          65          70
ttc tac aga gac acg gtg atc ggc gac tgt gtt aag gaa gaa gaa tgc      291
Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val Lys Glu Glu Glu Cys
                        75          80          85          90
gac caa cat gag att att cat gtc tgaacgagag agcagtaata accaaagggtt c      346
Asp Gln His Glu Ile Ile His Val
                        95
caactttcgc tctacaaaat cgctagttgg atttctcctt tgcgtgcgaa tagtttttagt      406

tgatattaag taaaacctcc tgttgaagag aataaagctt tccaacttc      455

```

<210> 6

<211> 75

<212> PRT

<213> Ascyclostoma caninum

<400> 6

```

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Val Cys Gly
1          5          10          15
Thr Lys Lys Pro Cys Glu Ala Lys Cys Ser Glu Glu Glu Glu Glu Asp
20          25          30
Pro Ile Cys Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys
35          40          45
Glu Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val Lys Glu
50          55          60
Glu Glu Cys Asp Gln His Glu Ile Ile His Val
65          70          75

```

<210> 7  
 <211> 81  
 <212> PRT  
 <213> Ascyclostoma caninum

<400> 7

Arg	Thr	Val	Arg	Lys	Ala	Tyr	Pro	Glu	Cys	Gly	Glu	Asn	Glu	Trp	Leu
1				5					10					15	
Asp	Asp	Cys	Gly	Thr	Gln	Lys	Pro	Cys	Glu	Ala	Lys	Cys	Asn	Glu	Glu
			20					25					30		
Pro	Pro	Glu	Glu	Glu	Asp	Pro	Ile	Cys	Arg	Ser	Arg	Gly	Cys	Leu	Leu
		35				40						45			
Pro	Pro	Ala	Cys	Val	Cys	Lys	Asp	Gly	Phe	Tyr	Arg	Asp	Thr	Val	Ile
	50					55				60					
Gly	Asp	Cys	Val	Arg	Glu	Glu	Glu	Cys	Asp	Gln	His	Glu	Ile	Ile	His
65					70					75					80
Val															

<210> 8  
 <211> 79  
 <212> PRT  
 <213> Ascyclostoma caninum

<400> 8

Arg	Thr	Val	Arg	Lys	Ala	Tyr	Pro	Glu	Cys	Gly	Glu	Asn	Glu	Trp	Leu
1				5					10					15	
Asp	Val	Cys	Gly	Thr	Lys	Lys	Pro	Cys	Glu	Ala	Lys	Cys	Ser	Glu	Glu
			20					25					30		
Glu	Glu	Glu	Asp	Pro	Ile	Cys	Arg	Ser	Phe	Ser	Cys	Pro	Gly	Pro	Ala
		35				40						45			
Ala	Cys	Val	Cys	Glu	Asp	Gly	Phe	Tyr	Arg	Asp	Thr	Val	Ile	Gly	Asp
	50					55				60					
Cys	Val	Lys	Glu	Glu	Glu	Cys	Asp	Gln	His	Glu	Ile	Ile	His	Val	
65					70					75					

<210> 9  
 <211> 711  
 <212> DNA  
 <213> Ancylostoma cephalicum

<220>  
 <221> CDS  
 <222> (21)..(590)

<230>  
 <231> misc\_feature  
 <233> Rcombinant cDNA Molecule AceNAP4

<400> 9

```

gaattcacta ttatccaaca atg gcg gtg ctt tat tca gta gca ata gcg      50
                Met Ala Val Leu Tyr Ser Val Ala Ile Ala
                1                5                10
tta cta ctg gta tca caa tgc agt ggg aaa ccg aac aat gtg atg act      98
Leu Leu Leu Val Ser Gln Cys Ser Gly Lys Pro Asn Asn Val Met Thr
                15                20                25
aac gct tgt ggt ctt aat gaa tat ttc gct gag tgt ggc aat atg aag      146
Asn Ala Cys Gly Leu Asn Glu Tyr Phe Ala Glu Cys Gly Asn Met Lys
                30                35                40
gaa tgc gag cac aga tgc aat gag gag gaa aat gag gaa agg gac gag      194
Glu Cys Glu His Arg Cys Asn Glu Glu Glu Asn Glu Glu Arg Asp Glu
                45                50                55
gaa aga ata acg gca tgc ctc atc cgt gtg tgt ttc cgt cct ggt gct      242
Glu Arg Ile Thr Ala Cys Leu Ile Arg Val Cys Phe Arg Pro Gly Ala
                60                65                70
tgc gta tgc aaa gac gga ttc tat aga aac aga aca ggc agc tgt gtg      290
Cys Val Cys Lys Asp Gly Phe Tyr Arg Asn Arg Thr Gly Ser Cys Val
                75                80                85                90
gaa gaa gat gac tgc gag tac gag aat atg gag ttc att act ttt gca      338
Glu Glu Asp Asp Cys Glu Tyr Glu Asn Met Glu Phe Ile Thr Phe Ala
                95                100                105
cca gaa gta ccg ata tgt ggt tcc aac gaa agg tac tcc gac tgc ggc      386
Pro Glu Val Pro Ile Cys Gly Ser Asn Glu Arg Tyr Ser Asp Cys Gly
                110                115                120
aat gac aaa caa tgc gag cgc aaa tgc aac gag gac gat tat gag aag      434
Asn Asp Lys Gln Cys Glu Arg Lys Cys Asn Glu Asp Asp Tyr Glu Lys
                125                130                135
gga gat gag gca tgc cgc tca cat gtt tgt gaa cgt cct ggt gcc tgt      482
Gly Asp Glu Ala Cys Arg Ser His Val Cys Glu Arg Pro Gly Ala Cys
                140                145                150
gta tgc gaa gac ggg ttc tac aga aac aaa aaa ggt agc tgt gtg gaa      530
Val Cys Glu Asp Gly Phe Tyr Arg Asn Lys Lys Gly Ser Cys Val Glu
                155                160                165                170
agc gat gac tgc gaa tac gat aat atg gat ttc atc act ttt gca cca      578
Ser Asp Asp Cys Glu Tyr Asp Asn Met Asp Phe Ile Thr Phe Ala Pro
                175                180                185
gaa acc tca cga taaccaaaga tgctacctct cgtacgcaac tccgctgatt gaggtt      636
Glu Thr Ser Arg
                190
gattcactcc cttgcactctc aacatttttt ttgtgatgct gtgcatctga gcttaacctg      696

```

ataaagccta tgggtg

711

<210> 10  
<211> 425  
<212> DNA  
<213> Ancylostoma ceylanicum

<220>  
<221> CDS  
<222> (10)..(291)

<220>  
<221> misc\_feature  
<223> Recombinant cDNA Molecule AceNAP5

<400> 10

gaattccgc atg cgg acg ctc tac ctc att tct atc tgg ttg ttc ctc atc 51  
Met Arg Thr Leu Tyr Leu Ile Ser Ile Trp Leu Phe Leu Ile  
1 5 10  
tcg caa tgt aat gga aaa gca ttc ccg aaa tgt gac gtc aat gaa aga 99  
Ser Gln Cys Asn Gly Lys Ala Phe Pro Lys Cys Asp Val Asn Glu Arg  
15 20 25 30  
ttc gac gtg tgt ggc aat ctg aag gag tgc gag ctc aag tgc gat gag 147  
Phe Glu Val Cys Gly Asn Leu Lys Glu Cys Glu Leu Lys Cys Asp Glu  
35 40 45  
gac cct aag ata tgc tct cgt gca tgt att cgt ccc cct gct tgc gta 195  
Asp Pro Lys Ile Cys Ser Arg Ala Cys Ile Arg Pro Pro Ala Cys Val  
50 55 60  
tgc gat gac gga ttc tac aga gac aaa tat ggc ttc tgt gtt gaa gaa 243  
Cys Asp Asp Gly Phe Tyr Arg Asp Lys Tyr Gly Phe Cys Val Glu Glu  
65 70 75  
gac gaa tgt aac gat atg gag att att act ttt cca cca gaa acc aaa tg 293  
Asp Glu Cys Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys  
80 85 90  
atgaccgaag cttccacctt tctatacata tcttcactgc ttgacaggct tctcgacaat 353  
ttagaagttc tgcttgactt tgtctatttg aaattgttca cactaatggg ggaagtaaag 413  
catttttcacg ac 425

<210> 11  
<211> 471  
<212> DNA  
<213> Ancylostoma ceylanicum

<220>  
<221> CDS  
<222> (23)..(237)

<220>  
<221> misc\_feature  
<223> Recombinant cDNA Molecule AceNAP7

<400> 11

gaattccgct acattttcaa ca atg tcg acg ctt tat gtt atc gca ata tgt	52
Met Ser Thr Leu Tyr Val Ile Ala Ile Cys	
1 5 10	
ttg ctg ctt gtt tcg caa tgc aat gga aga acg gtg aag aag tgt ggc	100
Leu Leu Leu Val Ser Gln Cys Asn Gly Arg Thr Val Lys Lys Cys Gly	
15 20 25	
aag aat gaa aga tac gac gac tgt ggc aat gca aag gac tgc gag acc	148
Lys Asn Glu Arg Tyr Asp Asp Cys Gly Asn Ala Lys Asp Cys Glu Thr	
30 35 40	
aag tgc ggt gaa gag gaa aag gtg tgc cgt tcg cgt gag tgt act agt	196
Lys Cys Gly Glu Glu Glu Lys Val Cys Arg Ser Arg Glu Cys Thr Ser	
45 50 55	
cct ggt gcc tgc gta tgc gaa caa gga ttc tac aga gat ccg gct ggc	244
Pro Gly Ala Cys Val Cys Glu Glu Gly Phe Tyr Arg Asp Pro Ala Gly	
60 65 70	
gac tgt gtc act gat gaa gaa tgt gat gaa tgg aac aat atg gag atc	292
Asp Cys Val Thr Asp Glu Glu Cys Asp Glu Trp Asn Asn Met Glu Ile	
75 80 85 90	
att act atg cca aaa cag tagtgccaag ttcccttctt tctccaaatc tgctccgtg	349
Ile Thr Met Pro Lys Gln	
95	
ctcaattatc acacacctcc actagttaag attgactgac tctcttgcat tgtagtattt	409
tcgcttgact ctgtgcattt aagcatgaga tactactagg gagaataaaa attactaact	469
ac	471



<210> 12  
 <211> 396  
 <212> DNA  
 <213> Ancylostoma duodenale

<220>  
 <221> CDS  
 <222> (10)..(237)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule Adu NAP4

<400> 12

```

gaattccgg aaa tgt cct acc gat gaa tgg ttc gat tgg tgt gga act tac      51
      Lys Cys Pro Thr Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr
      1              5              10
aag cat tgc gaa ctc aag tgc gat agg gag cta act gag aaa gaa gag      99
Lys His Cys Glu Leu Lys Cys Asp Arg Glu Leu Thr Glu Lys Glu Glu
15              20              25              30
cag gca tgt ctc tca cgt gtt tgt gag aag tcc gct tgc gta tgc aat      147
Gln Ala Cys Leu Ser Arg Val Cys Glu Lys Ser Ala Cys Val Cys Asn
      35              40              45
gac gga tta tac aga gac aag ttt ggc aac tgt gtt gaa aaa gac gaa      195
Asp Gly Leu Tyr Arg Asp Lys Phe Gly Asn Cys Val Glu Lys Asp Glu
      50              55              60
tgc aac gat atg gag att att act ttt gca cca gaa acc aaa taatggccta      247
Cys Asn Asp Met Glu Ile Ile Thr Phe Ala Pro Glu Thr Lys
      65              70              75
aggttccaaa ccttgctaca caccgtcagt gctttactgt ttcctctacg tgtagtagt      307
tttgcttgac tctgtgtatt taagcattgt ctactaatgg gcaaagtaaa gcattgtaag      367
gacataataa tgagtaaacc ttctgattt      396
  
```

<210> 13  
 <211> 688  
 <212> DNA  
 <213> Ancylostoma ceylanicum

<220>  
 <221> CDS  
 <222> (21)..(560)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AduNAP7

<400> 13

```

gaattccggg cggcagaaag  atg cga atg ctc tac ctt gtt cct atc tgg      50
                        Met Arg Met Leu Tyr Leu Val Pro Ile Trp
                        1         5         10

ttg ctg ctc att tcg cta tgc agt gga aaa gct gcg aag aaa tgt ggt      98
Leu Leu Leu Ile Ser Leu Cys Ser Gly Lys Ala Ala Lys Lys Cys Gly
                        15         20         25

ctc aat gaa agg ctg gac tgt ggc aat ctg aag caa tgc gag ccc aag      146
Leu Asn Glu Arg Leu Asp Cys Gly Asn Leu Lys Gln Cys Glu Pro Lys
                        30         35         40

tgc agc gac ttg gaa agt gag gag tat gag gag gaa gat gag tcg aaa      194
Cys Ser Asp Leu Glu Ser Glu Glu Tyr Glu Glu Glu Asp Glu Ser Lys
                        45         50         55

tgt cga tca cgt gaa tgt tct cgt cgt gtt tgt gta tgc gat gaa gga      242
Cys Arg Ser Arg Glu Cys Ser Arg Arg Val Cys Val Cys Asp Glu Gly
                        60         65         70

ttc tac aga aac aag aag ggc aag tgt gtt cga aaa gat gtt tgc gag      290
Phe Tyr Arg Asn Lys Lys Gly Lys Cys Val Ala Lys Asp Val Cys Glu
75         80         85         90

gac gac aat atg gag att atc act ttt cca cca gaa gac gaa tgt ggt      338
Asp Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu Asp Glu Cys Gly
                        95         100        105

ccc gat gaa tgg ttc gac tac tgt gga aat tat aag aag tgc gaa cgc      386
Pro Asp Glu Trp Phe Asp Tyr Cys Gly Asn Tyr Lys Lys Cys Glu Arg
                        110        115        120

aag tgc agt gag gag aca agt gag aaa aat gag gag gca tgc ctc tct      434
Lys Cys Ser Glu Glu Thr Ser Glu Lys Asn Glu Glu Ala Cys Leu Ser
                        125        130        135

cgt gct tgt act ggt cgt gct tgc gta tgc aaa gac gga ttg tac aga      482
Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Lys Asp Gly Leu Tyr Arg
                        140        145        150

gac gac ttt ggc aac tgt gtt cca cat gac gaa tgc aac gat atg gag      530
Asp Asp Phe Gly Asn Cys Val Pro His Asp Glu Cys Asn Asp Met Glu
155        160        165        170

atc atc act ttt cca ccg gaa acc aaa cat tgaccagagg ctccaactct cgct      584
Ile Ile Thr Phe Pro Pro Glu Thr Lys His
                        175        180

acacaacgtc agggctagaa tggccctct gcgagtagt agttttgctt gactctgctt      644

atttgagcac tttctattga tggcgaaaat aaagcattta aaac      688
  
```

<210> 14  
 <211> 349  
 <212> DNA  
 <213> Heligmosomoides polygyrus

<220>  
 <221> CDS  
 <222> (49)..(276)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule HpoNAP5

<400> 14

```

gaattccgcg cacctgagag gtgagctacg caagtcttcg ctggtaca atg atc cga      57
                                     Met Ile Arg
                                     1
aag ctc gtt ctg ctg act gct atc gtc acg gtg gtg cta agt gcg aag      105
Lys Leu Val Leu Leu Thr Ala Ile Val Thr Val Val Leu Ser Ala Lys
      5          10          15
acc tgt gga cca aac gag gag tac act gaa tgc ggg acg cca tgc gag      153
Thr Cys Gly Pro Asn Glu Glu Tyr Thr Glu Cys Gly Thr Pro Cys Glu
20          25          30          35
ccg aag tgc aat gaa ccg atg cca gac atc tgt act ctg aac tgc atc      201
Pro Lys Cys Asn Glu Pro Met Pro Asp Ile Cys Thr Leu Asn Cys Ile
      40          45          50
gtg aac gtg tgt cag tgc aaa ccc ggc ttc aag cgc gga ccg aaa gga      249
Val Asn Val Cys Gln Cys Lys Pro Gly Phe Lys Arg Gly Pro Lys Gly
      55          60          65
tgc gtc gcc ccc gga cca ggc tgt aaa tagttctcca cctgcccttt cgttggaa      304
Cys Val Ala Pro Gly Pro Gly Cys Lys
      70          75
caaatggctg tctttttaca ttctgaatca ataaagccga acggt      349

```

<210> 15  
 <211> 432  
 <212> DNA  
 <213> Heligmosomoides polygyrus

<220>  
 <221> CDS  
 <222> (40)..(393)

<220>  
 <221> misc\_feature  
 <223> Vectors pDONG61

<400> 15

```

aagcttttgct aacatactgc gtaataagga gtcttaatc atg cca gtt ctt ttg      54
                                     Met Pro Val Leu Leu
                                     1          5
ggg att ccg tta tta ttg cgt ttc ctc ggt ttc ctt ctg gta act ttg      102

```

Gly Ile Pro Leu Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu	
10 15 20	
ttc ggc tat ctg ctt act ttc ctt aaa aag ggc ttc ggt aag ata gct	150
Phe Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala	
25 30 35	
att gct att tca ttg ttt ctt gct ctt att att ggg ctt aac tca att	198
Ile Ala Ile Ser Leu Phe Leu Ala Leu Ile Ile Gly Leu Asn Ser Ile	
40 45 50	
ctt gtg ggt tat ctc tct gat att agc gca caa tta ccc tct gat ttt	246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe	
55 60 65	
ggt cag ggc gtt cag tta att ctc ccg tct aat gcg ctt ccc tgt ttt	294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe	
70 75 80 85	
tat gtt att ctc tct gta aag gct gct att ttc att ttt gac gtt aaa	342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys	
90 95 100	
caa aaa atc gtt tct tat ttg gat tgg gat aaa ggt gga ggc tca ggc	390
Gln Lys Ile Val Ser Tyr Leu Asp Trp Asp Lys Gly Gly Gly Ser Gly	
105 110 115	
gga ggccaagtgc gccatcccat atcacgcggc cgcggatcc	432
Gly	

<210> 16  
 <211> 433  
 <212> DNA  
 <213> Heligmosomoides polygyrus

<220>  
 <221> CDS  
 <222> (40)..(393)

<220>  
 <221> misc\_feature  
 <223> Vectors pDONG62

<400> 16

aagcttttgct aacatactgc gtaataagga gtcttaatc atg cca gtt ctt ttg	54
Met Pro Val Leu Leu	
1 5	
ggt att ccg tta tta ttg cgt ttc ctc ggt ttc ctt ctg gta act ttg	102
Gly Ile Pro Leu Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu	
10 15 20	
ttc ggc tat ctg ctt act ttc ctt aaa aag ggc ttc ggt aag ata gct	150
Phe Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala	
25 30 35	
att gct att tca ttg ttt ctt gct ctt att att ggg ctt aac tca att	198
Ile Ala Ile Ser Leu Phe Leu Ala Leu Ile Ile Gly Leu Asn Ser Ile	
40 45 50	
ctt gtg ggt tat ctc tct gat att agc gca caa tta ccc tct gat ttt	246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe	
55 60 65	
ggt cag ggc gtt cag tta att ctc ccg tct aat gcg ctt ccc tgt ttt	294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe	
70 75 80 85	

tat gtt att ctc tct gta aag gct gct att ttc att ttt gac gtt aaa	342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys	
90 95 100	
caa aaa atc gtt tct tat ttg gat tgg gat aaa ggt gga ggc tca ggc	390
Gln Lys Ile Val Ser Tyr Leu Asp Trp Asp Lys Gly Gly Gly Ser Gly	
105 110 115	
gga gggccaagtc ggccatccca tatcacgcgg ccgcggatcc	433
Gly	

<210> 17  
 <211> 434  
 <212> DNA  
 <213> Heligmosomoides polygyrus

<220>  
 <221> CDS  
 <222> (140)..(291)  
 <220>  
 <221> misc\_feature  
 <223> Vectors pDONG63

<400> 17

aagctttgct aacatactgc gtaataagga gtcttaatc atg cca gtt ctt ttg	54
Met Pro Val Leu Leu	
1 5	
ggt att ccg tta tta ttg cgt ttc ctc ggt ttc ctt ctg gta act ttg	102
Gly Ile Pro Leu Leu Arg Phe Leu Gly Phe Leu Leu Val Thr Leu	
10 15 20	
ttc ggc tat ctg ctt act ttc ctt aaa aag ggc ttc ggt aag ata gct	150
Phe Gly Tyr Leu Leu Thr Phe Leu Lys Lys Gly Phe Gly Lys Ile Ala	
25 30 35	
att gct att tca ttg ttt ctt gct ctt att att ggg ctt aac tca att	198
Ile Ala Ile Ser Leu Phe Leu Ala Leu Ile Ile Gly Leu Asn Ser Ile	
40 45 50	
ctt gtg ggt tat ctc tct gat att agc gca caa tta ccc tct gat ttt	246
Leu Val Gly Tyr Leu Ser Asp Ile Ser Ala Gln Leu Pro Ser Asp Phe	
55 60 65	
ggt cag ggc gtt cag tta att ctc ccg tct aat gcg ctt ccc tgt ttt	294
Val Gln Gly Val Gln Leu Ile Leu Pro Ser Asn Ala Leu Pro Cys Phe	
70 75 80 85	
tat gtt att ctc tct gta aag gct gct att ttc att ttt gac gtt aaa	342
Tyr Val Ile Leu Ser Val Lys Ala Ala Ile Phe Ile Phe Asp Val Lys	
90 95 100	
caa aaa atc gtt tct tat ttg gat tgg gat aaa ggt gga ggc tca ggc	390
Gln Lys Ile Val Ser Tyr Leu Asp Trp Asp Lys Gly Gly Gly Ser Gly	
105 110 115	
gga tcggccaagt cggccatccc atatcacgcg gccgcggatc c	434
Gly	

<210> 18  
 <211> 6  
 <212> PRT  
 <213> Artifical Sequence

<220>  
 <221> misc-feature  
 <223> Description of Artifical Sequence: pDONG vector linker sequence

<400> 18

Gly Gly Gly Ser Gly Gly  
 1 5

<210> 19  
 <211> 430  
 <212> DNA  
 <213> Ancylostoma ceylanicum

<220>  
 <221> CDS  
 <222> (10)..(282)

<220>  
 <221> misc-feature  
 <223> "w" stands for a or t

<400> 19

gaattccgg	ctg gtw tcc tac tgc agt gga aaa gca acg atg cag tgt ggt	51
	Leu Val Ser Tyr Cys Ser Gly Lys Ala Thr Met Gln Cys Gly	
	1 5 10	
gag aat gaa aag tac gat tcg tgc ggt agc aag gag tgc gat aag aag	99	
Glu Asn Glu Lys Tyr Asp Ser Cys Gly Ser Lys Glu Cys Asp Lys Lys		
15 20 25 30		
tgc aaa tat gac gga gtt gag gag gaa gac gac gag gaa cct aat gtg	147	
Cys Lys Tyr Asp Gly Val Glu Glu Glu Asp Asp Glu Glu Pro Asn Val		
35 40 45		
cca tgc cta gta cgt gtg tgt cat caa gat tgc gta tgc gaa gaa gga	195	
Pro Cys Leu Val Arg Val Cys His Gln Asp Cys Val Cys Glu Glu Gly		
50 55 60		
ttc tat aga aac aaa gat gac aaa tgt gta tca gca gaa gag tgc gaa	243	
Phe Tyr Arg Asn Lys Asp Asp Lys Cys Val Ser Ala Glu Asp Cys Glu		
65 70 75		
ctt gac aat atg gac ttt ata tat ccc gga act cga aac tgaacgaagg ctc	295	
Leu Asp Asn Met Asp Phe Ile Tyr Pro Gly Thr Arg Asn		
80 85 90		
cattcttgct gcacaagatc gattgtctct cccctgcatc tcagtagttt tgetacattg	355	
tatatggtag caaaaaatta gcttagggag aataaaatct ttacctatat ttaatcaatg	415	
aagtattctc tttct	430	

<210> 20  
 <211> 100  
 <212> PRT  
 <213> Ancylostoma caninum

<400> 20

Met	Lys	Met	Leu	Tyr	Ala	Ile	Ala	Ile	Met	Phe	Leu	Leu	Val	Ser	Leu
1			5						10					15	
Cys	Ser	Ala	Arg	Thr	Val	Arg	Lys	Ala	Tyr	Pro	Glu	Cys	Gly	Glu	Asn
		20					25						30		
Glu	Trp	Leu	Asp	Asp	Cys	Gly	Thr	Gln	Lys	Pro	Cys	Glu	Ala	Lys	Cys
	35					40						45			
Asn	Glu	Glu	Pro	Pro	Glu	Glu	Glu	Asp	Pro	Ile	Cys	Arg	Ser	Arg	Gly
	50					55					60				
Cys	Leu	Leu	Pro	Pro	Ala	Cys	Val	Cys	Lys	Asp	Gly	Phe	Tyr	Arg	Asp
65					70				75					80	
Thr	Val	Ile	Gly	Asp	Cys	Val	Arg	Glu	Glu	Glu	Cys	Asp	Gln	His	Glu
			85					90						95	
Ile	Ile	His	Val												
			100												

<210> 21  
 <211> 98  
 <212> PRT  
 <213> Ancylostoma caninum

<400> 21

Met	Lys	Met	Leu	Tyr	Ala	Ile	Ala	Ile	Met	Phe	Leu	Leu	Val	Ser	Leu
1			5						10					15	
Cys	Ser	Thr	Arg	Thr	Val	Arg	Lys	Ala	Tyr	Pro	Glu	Cys	Gly	Glu	Asn
		20					25						30		
Glu	Trp	Leu	Asp	Val	Cys	Gly	Thr	Lys	Lys	Pro	Cys	Glu	Ala	Lys	Cys
	35					40						45			
Ser	Glu	Glu	Glu	Glu	Glu	Asp	Pro	Ile	Cys	Arg	Ser	Phe	Ser	Cys	Pro
	50					55					60				
Gly	Pro	Ala	Ala	Cys	Val	Cys	Glu	Asp	Gly	Phe	Tyr	Arg	Asp	Thr	Val
65					70				75					80	
Ile	Gly	Asp	Cys	Val	Lys	Glu	Glu	Glu	Cys	Asp	Gln	His	Glu	Ile	Ile
			85					90						95	
His	Val														

<210> 22  
 <211> 94  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<400> 22

Met	Arg	Thr	Leu	Tyr	Leu	Ile	Ser	Ile	Trp	Leu	Phe	Leu	Ile	Ser	Gln
1				5					10					15	
Cys	Asn	Gly	Lys	Ala	Phe	Pro	Lys	Cys	Asp	Val	Asn	Glu	Arg	Phe	Glu
			20					25					30		
Val	Cys	Gly	Asn	Leu	Lys	Glu	Cys	Glu	Leu	Lys	Cys	Asp	Glu	Asp	Pro
		35					40					45			
Lys	Ile	Cys	Ser	Arg	Ala	Cys	Ile	Arg	Pro	Pro	Ala	Cys	Val	Cys	Asp
	50					55					60				
Asp	Gly	Phe	Tyr	Arg	Asp	Lys	Tyr	Gly	Phe	Cys	Val	Glu	Glu	Asp	Glu
65					70					75					80
Cys	Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys		
				85					90						

<210> 23  
 <211> 96  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<400> 23

Met	Ser	Thr	Leu	Tyr	Val	Ile	Ala	Ile	Cys	Leu	Leu	Leu	Val	Ser	Gln
1				5					10					15	
Cys	Asn	Gly	Arg	Thr	Val	Lys	Lys	Cys	Gly	Lys	Asn	Glu	Arg	Tyr	Asp
			20					25					30		
Asp	Cys	Gly	Asn	Ala	Lys	Asp	Cys	Glu	Thr	Lys	Cys	Gly	Glu	Glu	Glu
		35					40					45			
Lys	Val	Cys	Arg	Ser	Arg	Glu	Cys	Thr	Ser	Pro	Gly	Ala	Cys	Val	Cys
	50					55					60				
Glu	Gln	Gly	Phe	Tyr	Arg	Asp	Pro	Ala	Gly	Asp	Cys	Val	Thr	Asp	Glu
65					70					75					80
Glu	Cys	Asp	Glu	Trp	Asn	Asn	Met	Glu	Ile	Ile	Thr	Met	Pro	Lys	Gln
				85					90					95	

<210> 24  
 <211> 108  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<400> 24

Met	Ala	Val	Leu	Tyr	Ser	Val	Ala	Ile	Ala	Leu	Leu	Leu	Val	Ser	Gln
1				5					10					15	
Cys	Ser	Gly	Lys	Pro	Asn	Asn	Val	Met	Thr	Asn	Ala	Cys	Gly	Leu	Asn
			20					25					30		
Glu	Tyr	Phe	Ala	Glu	Cys	Gly	Asn	Met	Lys	Glu	Cys	Glu	His	Arg	Cys
		35					40					45			



Asn Glu Glu Glu Asn Glu Glu Arg Asp Glu Glu Arg Ile Thr Ala Cys  
 50 55 60  
 Leu Ile Arg Val Cys Phe Arg Pro Gly Ala Cys Val Cys Lys Asp Gly  
 65 70 75 80  
 Phe Tyr Arg Asn Arg Thr Gly Ser Cys Val Glu Glu Asp Asp Cys Glu  
 85 90 95  
 Tyr Glu Asn Met Glu Phe Ile Thr Phe Ala Pro Glu  
 100 105

<210> 25  
 <211> 82  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<400> 25

Val Pro Ile Cys Gly Ser Asn Glu Arg Tyr Ser Asp Cys Gly Asn Asp  
 1 5 10 15  
 Lys Gln Cys Glu Arg Lys Cys Asn Glu Asp Asp Tyr Glu Lys Gly Asp  
 20 25 30  
 Glu Ala Cys Arg Ser His Val Cys Glu Arg Pro Gly Ala Cys Val Cys  
 35 40 45  
 Glu Asp Gly Phe Tyr Arg Asn Lys Lys Gly Ser Cys Val Glu Ser Asp  
 50 55 60  
 Asp Cys Glu Tyr Asp Asn Met Asp Phe Ile Thr Phe Ala Pro Glu Thr  
 65 70 75 80  
 Ser Arg

<210> 26  
 <211> 75  
 <212> PRT  
 <213> Ancylostoma duodenale

<400> 26

Lys Cys Pro Thr Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys His  
 1 5 10 15  
 Cys Glu Leu Lys Cys Asp Arg Glu Leu Thr Glu Glu Glu Gln Ala Cys  
 20 25 30  
 Leu Ser Arg Val Cys Glu Lys Ser Ala Cys Val Cys Asn Asp Gly Leu  
 35 40 45  
 Tyr Arg Asp Lys Phe Gly Asn Cys Val Glu Lys Asp Glu Cys Asn Asp  
 50 55 60  
 Met Glu Ile Ile Thr Phe Ala Pro Glu Thr Lys  
 65 70 75

<210> 27  
 <211> 102  
 <212> PRT  
 <213> Ancylostoma duodenale

<400> 27

Met	Arg	Met	Leu	Tyr	Leu	Val	Pro	Ile	Trp	Leu	Leu	Leu	Ile	Ser	Leu
1			5					10					15		
Cys	Ser	Gly	Lys	Ala	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Arg	Leu	Asp
		20					25					30			
Cys	Gly	Asn	Leu	Lys	Gln	Cys	Glu	Pro	Lys	Cys	Ser	Asp	Leu	Glu	Ser
	35					40					45				
Glu	Glu	Tyr	Glu	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys
	50				55						60				
Ser	Arg	Arg	Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys
65					70				75					80	
Gly	Lys	Cys	Val	Ala	Lys	Asp	Val	Cys	Glu	Asp	Asp	Asn	Met	Glu	Ile
			85					90						95	
Ile	Thr	Phe	Pro	Pro	Glu										
			100												

<210> 28  
 <211> 78  
 <212> PRT  
 <213> Ancylostoma duodenale

<400> 28

Asp	Glu	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Tyr	Cys	Gly	Asn	Tyr	Lys
1			5					10					15		
Lys	Cys	Glu	Arg	Lys	Cys	Ser	Glu	Glu	Thr	Ser	Glu	Lys	Asn	Glu	Glu
		20					25					30			
Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	Val	Cys	Lys	Asp
	35					40					45				
Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Pro	His	Asp	Glu	Cys
	50				55					60					
Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys	His		
65				70						75					

<210> 29  
 <211> 76  
 <212> PRT  
 <213> Helogmosomoides polygyrus

<400> 29

Met	Ile	Arg	Lys	Leu	Val	Leu	Leu	Thr	Ala	Ile	Val	Thr	Val	Val	Leu
1				5					10					15	
Ser	Ala	Lys	Thr	Cys	Gly	Pro	Asn	Glu	Glu	Tyr	Thr	Glu	Cys	Gly	Thr
		20						25					30		
Pro	Cys	Glu	Pro	Lys	Cys	Asn	Glu	Pro	Met	Pro	Asp	Ile	Cys	Thr	Leu
	35					40						45			
Asn	Cys	Ile	Val	Asn	Val	Cys	Gln	Cys	Lys	Pro	Gly	Phe	Lys	Arg	Gly
	50					55					60				
Pro	Lys	Gly	Cys	Val	Ala	Pro	Gly	Pro	Gly	Cys	Lys				
65					70					75					

<210> 30  
 <211> 187  
 <212> DNA  
 <213> Ancylostoma caninum

<400> 30

ttatttcgaaa	cgatgttctc	tccaattttg	tccttgga	aa	ttatttttagc	tactttgcaa	60
tctgtcttcg	cccagccagt	tatctccact	accgttggtt	ccgctgccga	gggttctttg		120
gacaagagggc	ctatccgagg	aattcagatc	tgaatgcggc	cgctcgagac	tagtggatcc		180
ttagaca							187

<210> 31  
 <211> 495  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (36)..(356)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP23

<400> 31

gaattccgcg gaattccgct tgctactact caacg atg aag acg ctc tat att	53
Met Lys Thr Leu Tyr Ile	
1 5	
gtc gct ata tgc tgc ctc ctc att tgc ctg tgt act gga aaa cct tcg	101
Val Ala Ile Cys Ser Leu Leu Ile Ser Leu Cys Thr Gly Lys Pro Ser	
10 15 20	
gag aaa gaa tgt ggt ccc cat gaa aga ctc gac tgt ggc aac aag aag	149
Glu Lys Glu Cys Gly Pro His Glu Arg Leu Asp Cys Gly Asn Lys Lys	
25 30 35	
cca tgc gag cgc aag tgc aaa ata gag aca agt gag gag gag gat gac	197
Pro Cys Glu Arg Lys Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp	
40 45 50	
tac gaa gag gga acc gaa cgt ttt cga tgc ctc tta cgt gtg tgt gat	245
Tyr Glu Glu Gly Thr Glu Arg Phe Arg Cys Leu Leu Arg Val Cys Asp	
55 60 65 70	
cag cct tat gaa tgc ata tgc gat gat gga tac tac aga aac aag aaa	293
Gln Pro Tyr Glu Cys Ile Cys Asp Asp Gly Tyr Tyr Arg Asn Lys Lys	
75 80 85	
ggc gaa tgt gtg act gat gat gta tgc cag gaa gac ttt atg gag ttt	341
Gly Glu Cys Val Thr Asp Asp Val Cys Gln Glu Asp Phe Met Glu Phe	
90 95 100	
att act ttc gca cca taaaccaat aatgaccaat gactcccatt cttcgtgatc ag	398
Ile Thr Phe Ala Pro	
105	
cgtcggtggg tgacagtctc cctacatct tagtagtttt gcttgataat gtatacataa	458
actgtacttt ctgagataga ataaagctct caactac	495

<210> 32  
 <211> 478  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (24)..(341)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP24

<400> 32

```

gaattccgcg gaattccgca acg atg aag acg ctc tat att atc gct ata tgc      53
                        Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                        1           5           10

tcg ctc ctc att tcg ttg tgt act gga aga ccg gaa aaa aag tgc ggt      101
Ser Leu Leu Ile Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
                        15           20           25

ccc ggt gaa aga ctc gcc tgt ggc aat aag aag cca tgc gag cgc aag      149
Pro Gly Glu Arg Leu Ala Cys Gly Asn Lys Lys Pro Cys Glu Arg Lys
                        30           35           40

tgc aaa ata gag aca agt gag gag gag gat gac tac cca gag gga acc      197
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Tyr Pro Glu Gly Thr
                        45           50           55

gaa cgt ttt cga tgc ctc tta cgt gtg tgt gat cag cct tat gaa tgc      245
Glu Arg Phe Arg Cys Leu Leu Arg Val Cys Asp Gln Pro Tyr Glu Cys
                        60           65           70

ata tgc gat gat gga tac tac aga aac aag aaa ggc gaa tgt gtg act      293
Ile Cys Asp Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr
                        75           80           85           90

gat gat gta tgc cag gaa gac ttt atg gag ttt att act ttc gca cca      341
Asp Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                        95           100           105

taaaccaat aatgaccact ggctccatt ctctgtgacc agcgtcgggtg gttgacagtc      401

tccctgcat cttagtagtt ttgcttgata atgtatccat aaacagtact ttctgagata      461

gaataaagct ctcaact      478

```

<210> 33  
 <211> 472  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (21)..(335)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP25

<400> 33

```

gaattccgta ctactcaacg atg aag acg ctc tat att atc gct ata tgc      50
                        Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                        1           5           10
tcg ctg ctc ttt tca ctg tgt act gga aga ccg gaa aaa aag tgc ggt      98
Ser Leu Leu Phe Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
                        15           20           25
ccc ggt gaa aga ctc gac tgt gcc aac aag aag cca tgc gag ccc aag      146
Pro Gly Glu Arg Leu Asp Cys Ala Asn Lys Lys Pro Cys Glu Pro Lys
                        30           35           40
tgc aaa ata gag aca agt gag gag gag gat gac gac gta gag gat acc      194
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Asp Val Glu Asp Thr
                        45           50           55
gat gtg aga tgc ctc gta cgt gtg tgt gaa cgt cct ctt aaa tgc ata      242
Asp Val Arg Cys Leu Val Arg Val Cys Glu Arg Pro Leu Lys Cys Ile
                        60           65           70
tgc aag gat gga tac tac aga aac aag aaa ggc gaa tgt gtg act gaT      290
Cys Lys Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr Asp
                        75           80           85           90
gat gta tgc cag gaa gac ttt atg gag ttt att act ttc gca cca taaacc      341
Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                        95           100          105
caataatgac cactggctcc cattcttcgt gatcagcgtc ggtgggttgac agtctccct      401

gcattcttagt tgctttgctt gataatctat acataaacag tactttctga gatagaataa      461

agctctcaac t      472
  
```

<210> 34  
 <211> 487  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (57)..(347)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP31, AcaNAP42 and AcaNAP46

<400> 34

```

gaattccgga cttactagta ctcagcgaat caaatacgac ttactactac tcaacg atg      59
                                     Met
                                     1
aag acg ctc tct gct atc cct ata atg ctg ctc ctg gta tcg caa tgc      107
Lys Thr Leu Ser Ala Ile Pro Ile Met Leu Leu Leu Val Ser Gln Cys
      5              10              15
agt gga aaa tca ctg tgg gat cag aag tgt ggt gag aat gaa agg ctc      155
Ser Gly Lys Ser Leu Trp Asp Gln Lys Cys Gly Glu Asn Glu Arg Leu
      20              25              30
gac tgt ggc aat cag aag gac tgt gag cgc aag tgc gat gat aaa aga      203
Asp Cys Gly Asn Gln Lys Asp Cys Glu Arg Lys Cys Asp Asp Lys Arg
      35              40              45
agt gaa gaa gaa att atg cag gca tgt ctc aca cgt caa tgt ctt cct      251
Ser Glu Glu Glu Ile Met Gln Ala Cys Leu Thr Arg Gln Cys Leu Pro
      50              55              60              65
cct gtt tgc gta tgt gaa gat gga ttc tac aga aat gac aac gac caa      299
Pro Val Cys Val Cys Glu Asp Gly Phe Tyr Arg Asn Asp Asn Asp Gln
      70              75              80
tgt gtt gat gaa gaa gaa tgc aat atg gag ttt att act ttc gcr cca tg      349
Cys Val Asp Glu Glu Glu Cys Asn Met Glu Phe Ile Thr Phe Ala Pro
      85              90              95
aagcaaatga cagccgatgg tttggactct cgctacagat cacagcttta ctgtttccct      409

tgcacatag tagttttgct agatagtgta tatattagca tgattttctg atagggagaa      469

taaagctttc caattttc      487
  
```

<210> 35  
 <211> 477  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (24)..(338)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP44

<400> 35

```

gaattccgcg gaattccgca acg atg aag acg ctc tat att atc gct ata tgc      53
                        Met Lys Thr Leu Tyr Ile Ile Ala Ile Cys
                        1           5           10

tcg ctc ctc att tcg ctg tgt act gga aga ccg gaa aaa aag tgc ggt      101
Ser Leu Leu Ile Ser Leu Cys Thr Gly Arg Pro Glu Lys Lys Cys Gly
                        15           20           25

ccc ggt gaa aga ctc gac tgt gcc aac aag aag cca tgc gag ccc aag      149
Pro Gly Glu Arg Leu Asp Cys Ala Asn Lys Lys Pro Cys Glu Pro Lys
                        30           35           40

tgc aaa ata gag aca agt gag gag gag gat gac gac gta gag gaa acc      197
Cys Lys Ile Glu Thr Ser Glu Glu Glu Asp Asp Asp Val Glu Glu Thr
                        45           50           55

gat gtg aga tgc ctc gta cgt gtg tgt gaa cgg cct ctt aaa tgc ata      245
Asp Val Arg Cys Leu Val Arg Val Cys Glu Arg Pro Leu Lys Cys Ile
                        60           65           70

tgc aag gat gga tac tac aga aac aag aaa ggc gaa tgt gtg act gat      293
Cys Lys Asp Gly Tyr Tyr Arg Asn Lys Lys Gly Glu Cys Val Thr Asp
                        75           80           85           90

gat gta tgc cag gaa gac ttt atg gag ttt att act ttc gca cca taaacc      344
Asp Val Cys Gln Glu Asp Phe Met Glu Phe Ile Thr Phe Ala Pro
                        95           100          105

caataatgac cactggctcc cattcttcgt gatcagcgtc ggtgggttgac agtctccct      404

gcatcttagt tgctttgctt gataatctat acataaacag tactttctga gatagaataa      464

agctctcaac tac      477
  
```



<210> 36  
 <211> 686  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (14)..(556)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP45

<400> 36

aattccgga aaa atg ctg atg ctc tac ctt gtt cct atc tgg ttg cta	48
Met Leu Met Leu Tyr Leu Val Pro Ile Trp Leu Leu	
1 5 10	
ctc att tcg caa tgc agt gga aaa tcc gcg aag aaa tgt ggt ctc aat	98
Leu Ile Ser Gln Cys Ser Gly Lys Ser Ala Lys Lys Cys Gly Leu Asn	
15 20 25	
gaa aaa ttg gac tgt ggc aat ctg aag gca tgc gag aaa aag tgc agc	146
Glu Lys Leu Asp Cys Gly Asn Leu Lys Ala Cys Glu Lys Lys Cys Ser	
30 35 40	
gac ttg gac aat gag gag gat tat aag gag gaa gat gag tcg aaa tgc	194
Asp Leu Asp Asn Glu Glu Asp Tyr Lys Glu Glu Asp Glu Ser Lys Cys	
45 50 55 60	
cga tca cgt gaa tgt agt cgt cgt gtt tgt gta tgc gat gaa gga ttc	242
Arg Ser Arg Glu Cys Ser Arg Arg Val Cys Val Cys Asp Glu Gly Phe	
65 70 75	
tac aga aac aag aag ggc caa tgt gtg aca aga gat gat tgc gag tat	290
Tyr Arg Asn Lys Lys Gly Gln Cys Val Thr Arg Asp Asp Cys Glu Tyr	
80 85 90	
gac aat atg gag att atc act ttt cca cca gaa gat aaa tgt ggt ccc	338
Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu Asp Lys Cys Gly Pro	
95 100 105	
gat gaa tgg ttc gac tgg tgt gga act tac aag cag tgt gag cgc aag	386
Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys Gln Cys Glu Arg Lys	
110 115 120	
tgc aat aag gag cta agt gag aaa gat gaa gag gca tgc ctc tca cgt	434
Cys Asn Lys Glu Leu Ser Glu Lys Asp Glu Glu Ala Cys Leu Ser Arg	
125 130 135 140	
gct tgt act ggt cgt gct tgt gtt tgc aac gac gga ctg tac aga gac	482
Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp Gly Leu Tyr Arg Asp	
145 150 155	
gat ttt ggc aat tgt gtt gag aaa gac gaa tgt aac gat atg gag att	530
Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys Asn Asp Met Glu Ile	
160 165 170	
atc act ttt cca ccg gaa acc aaa cac tgaccaaagg ctctaactct cgctacat	585
Ile Thr Phe Pro Pro Glu Thr Lys His	
175 180	
aacgtcagtg cttgaattgc ccctttacga gttagtaatt ttgactaact ctgtgtaatt	645
gagcattgtc tactgatggg gaaaatgaag tgttcaatgt ct	686

<210> 37  
 <211> 707  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> CDS  
 <222> (34)..(576)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule AcaNAP47

<400> 37

```

gaattccgcg gaattccggt tggcggcaga aaa atg ctg atg ctc tac ctt gtt      54
                                   Met Leu Met Leu Tyr Leu Val
                                   1           5
cct atc tgg ttc ctg ctc att tcg caa tgc agt gga aaa tcc gcg aag      102
Pro Ile Trp Phe Leu Leu Ile Ser Gln Cys Ser Gly Lys Ser Ala Lys
    10           15           20
aaa tgt ggc ctc aat gaa aaa ttg gac tgt ggc aat ctg aag gca tgc      150
Lys Cys Gly Leu Asn Glu Lys Leu Asp Cys Gly Asn Leu Lys Ala Cys
    25           30           35
gag aaa aag tgc agc gac ttg gac aat gag gag gat tat ggg gag gaa      198
Glu Lys Lys Cys Ser Asp Leu Asp Asn Glu Glu Asp Tyr Gly Glu Glu
    40           45           50           55
gat gag tcg aaa tgc cga tca cgt gaa tgt att ggt cgt gtt tgc gta      246
Asp Glu Ser Lys Cys Arg Ser Arg Glu Cys Ile Gly Arg Val Cys Val
    60           65           70
tgc gat gaa gga ttc tac aga aac aag aag ggc caa tgt gtg aca aga      294
Cys Asp Glu Gly Phe Tyr Arg Asn Lys Lys Gly Gln Cys Val Thr Arg
    75           80           85
gac gat tgc gag tat gac aat atg gag att atc act ttt cca cca gaa      342
Asp Asp Cys Glu Tyr Asp Asn Met Glu Ile Ile Thr Phe Pro Pro Glu
    90           95           100
gat aaa tgt ggt ccc gat gaa tgg ttc gac tgg tgt gga act tac aag      390
Asp Lys Cys Gly Pro Asp Glu Trp Phe Asp Trp Cys Gly Thr Tyr Lys
    105          110          115
cag tgt gag cgc aag tgc agt gag gag cta agt gag aaa aat gag gag      438
Gln Cys Glu Arg Lys Cys Ser Glu Glu Leu Ser Glu Lys Asn Glu Glu
    120          125          130          135
gca tgc ctc tca cgt gct tgt act ggt cgt gct tgc gtt tgc aac gac      486
Ala Cys Leu Ser Arg Ala Cys Thr Gly Arg Ala Cys Val Cys Asn Asp
    140          145          150
gga ttg tat aga gac gat ttt ggc aat tgt gtt gag aaa gac gaa tgt      534
Gly Leu Tyr Arg Asp Asp Phe Gly Asn Cys Val Glu Lys Asp Glu Cys
    155          160          165
aac gat atg gag att atc act ttt cca ccg gaa acc aaa cac tgaccaaagg      586
Asn Asp Met Glu Ile Ile Thr Phe Pro Pro Glu Thr Lys His
    170          175          180

```

ctctagctct cgctacataa cgtcagtgct tgaattgtcc ctttacgtgt tagtaatttt 646  
gactaactct gtgtatttga gcattgtcta ctaatggtga aaatgaagct tttcaatgac 706  
t 707

<210> 38  
<211> 529  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> CDS  
<222> (31)..(309)

<220>  
<221> misc\_feature  
<223> Recombinant cDNA Molecule AcaNAP48

<400> 38

gaattccgta cgacctacta ctactcaacg atg aag gcg ctc tat gtt atc tct 54  
Met Lys Ala Leu Tyr Val Ile Ser  
1 5  
ata acg ttg ctc ctg gta tgg caa tgc agt gca aga aca gcg agg aaa 102  
Ile Thr Leu Leu Leu Val Trp Gln Cys Ser Ala Arg Thr Ala Arg Lys  
10 15 20  
ccc cca acg tgt ggt gaa aat gaa agg gtc gaa tgg tgt ggc aag cag 150  
Pro Pro Thr Cys Gly Glu Asn Glu Arg Val Glu Trp Cys Gly Lys Gln  
25 30 35 40  
tgc gag atc aca tgt gac gac cca gat aag ata tgc cgc tca ctc gct 198  
Cys Glu Ile Thr Cys Asp Asp Pro Asp Lys Ile Cys Arg Ser Leu Ala  
45 50 55  
tgt cct ggt cct cct gct tgc gta tgc gac gac gga tac tac aga gac 246  
Cys Pro Gly Pro Pro Ala Cys Val Cys Asp Asp Gly Tyr Tyr Arg Asp  
60 65 70  
acg aac gtt ggc ttg tgt gta caa tat gac gaa tgc aac gat atg gat 294  
Thr Asn Val Gly Leu Cys Val Gln Tyr Asp Glu Cys Asn Asp Met Asp  
75 80 85  
att att atg gtt tca taggggtgac tgaagaatcg aacaaccggt gcacaacttc 349  
Ile Ile Met Val Ser  
90  
tatgcttgac tatctctctt gcatcatgca agtttagcta gatagtgtat atattagcaa 409  
gacccttggt ggagaatgaa gcttcccaac tatattaaat caataacggt ttcgcttcat 469  
gtacacgtgc tcagcacatt catatccact cctcacactc catgaaagca gtgaaatggt 529

<210> 39  
 <211> 361  
 <212> DNA  
 <213> Necator americanus

<220>  
 <221> CDS  
 <222> (16)..(252)

<220>  
 <221> misc\_feature  
 <223> Recombinant cDNA Molecule NamNAP

<400> 39

gccaaactctt cgaac atg att cga ggc ctc gtt ctt ctt tct ctc ctg ttt	51
Met Ile Arg Gly Leu Val Leu Leu Ser Leu Leu Phe	
1 5 10	
tgc gtc act ttt gca gcg aag aga gat tgt cca gca aat gag gaa tgg	99
Cys Val Thr Phe Ala Ala Lys Arg Asp Cys Pro Ala Asn Glu Glu Trp	
15 20 25	
agg gaa tgt ggc act cca tgt gaa cca aaa tgc aat caa ccg atg cca	147
Arg Glu Cys Gly Thr Pro Cys Glu Pro Lys Cys Asn Gln Pro Met Pro	
30 35 40	
gat ata tgt act atg aat tgt atc gtc gat gtg tgt caa tgc aag gag	195
Asp Ile Cys Thr Met Asn Cys Ile Val Asp Val Cys Gln Cys Lys Glu	
45 50 55 60	
gga tac aag cgt cat gaa acg aag gga tgc tta aag gaa gga tca gct	243
Gly Tyr Lys Arg His Glu Thr Lys Gly Cys Leu Lys Glu Gly Ser Ala	
65 70 75	
gat tgt aaa taagttatca gaacgctcgt tttgtcttac attagatggg tgagctgatg	302
Asp Cys Lys	
tatctgtcag ataaactctt tcttctaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	361

<210> 40  
 <211> 77  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP5

<400> 40

```

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Asp Cys Gly
 1             5             10             15
Thr Gln Lys Pro Cys Glu Ala Lys Cys Asn Glu Glu Pro Pro Glu Glu
      20             25             30
Glu Asp Pro Ile Cys Arg Ser Arg Gly Cys Leu Leu Pro Pro Ala Cys
      35             40             45
Val Cys Lys Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val
      50             55             60
Arg Glu Glu Glu Cys Asp Gln His Glu Ile Ile His Val
65             70             75

```

<210> 41  
 <211> 75  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP6

<400> 41

```

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp Val Cys Gly
 1             5             10             15
Thr Lys Lys Pro Cys Glu Ala Lys Cys Ser Glu Glu Glu Glu Asp
      20             25             30
Pro Ile Cys Arg Ser Phe Ser Cys Pro Gly Pro Ala Ala Cys Val Cys
      35             40             45
Glu Asp Gly Phe Tyr Arg Asp Thr Val Ile Gly Asp Cys Val Lys Glu
      50             55             60
Glu Glu Cys Asp Gln His Glu Ile Ile His Val
65             70             75

```

<210> 42  
 <211> 74  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP48

<400> 42

Arg	Thr	Ala	Arg	Lys	Pro	Pro	Thr	Cys	Gly	Glu	Asn	Glu	Arg	Val	Glu
1				5					10					15	
Trp	Cys	Gly	Lys	Gln	Cys	Glu	Ile	Thr	Cys	Asp	Asp	Pro	Asp	Lys	Ile
			20					25					30		
Cys	Arg	Ser	Leu	Ala	Cys	Pro	Gly	Pro	Pro	Ala	Cys	Val	Cys	Asp	Asp
		35					40					45			
Gly	Tyr	Tyr	Arg	Asp	Thr	Asn	Val	Gly	Leu	Cys	Val	Gln	Tyr	Asp	Glu
	50					55					60				
Cys	Asn	Asp	Met	Asp	Ile	Ile	Met	Val	Ser						
65						70									

<210> 43  
 <211> 88  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP23

<400> 43

Lys	Pro	Ser	Glu	Lys	Glu	Cys	Gly	Pro	His	Glu	Arg	Leu	Asp	Cys	Gly
1				5					10					15	
Asn	Lys	Lys	Pro	Cys	Glu	Arg	Lys	Cys	Lys	Ile	Glu	Thr	Ser	Glu	Glu
			20					25					30		
Glu	Asp	Asp	Tyr	Glu	Glu	Gly	Thr	Glu	Arg	Phe	Arg	Cys	Leu	Leu	Arg
		35				40						45			
Val	Cys	Asp	Gln	Pro	Tyr	Glu	Cys	Ile	Cys	Asp	Asp	Gly	Tyr	Tyr	Arg
	50					55				60					
Asn	Lys	Lys	Gly	Glu	Cys	Val	Thr	Asp	Asp	Val	Cys	Gln	Glu	Asp	Phe
65					70				75						80
Met	Glu	Phe	Ile	Thr	Phe	Ala	Pro								
					85										

<210> 44  
 <211> 87  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP24

<400> 44

Arg	Pro	Glu	Lys	Lys	Cys	Gly	Pro	Gly	Glu	Arg	Leu	Ala	Cys	Gly	Asn
1				5					10					15	
Lys	Lys	Pro	Cys	Glu	Arg	Lys	Cys	Lys	Ile	Glu	Thr	Ser	Glu	Glu	Glu
			20					25					30		
Asp	Asp	Tyr	Pro	Glu	Gly	Thr	Glu	Arg	Phe	Arg	Cys	Leu	Leu	Arg	Val
		35				40					45				
Cys	Asp	Gln	Pro	Tyr	Glu	Cys	Ile	Cys	Asp	Asp	Gly	Tyr	Tyr	Arg	Asn
		50				55				60					
Lys	Lys	Gly	Glu	Cys	Val	Thr	Asp	Asp	Val	Cys	Gln	Glu	Asp	Phe	Met
65					70				75						80
Glu	Phe	Ile	Thr	Phe	Ala	Pro									
					85										

<210> 45  
 <211> 86  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP25

<400> 45

Arg	Pro	Glu	Lys	Lys	Cys	Gly	Pro	Gly	Glu	Arg	Leu	Asp	Cys	Ala	Asn
1				5					10					15	
Lys	Lys	Pro	Cys	Glu	Pro	Lys	Cys	Lys	Ile	Glu	Thr	Ser	Glu	Glu	Glu
			20					25					30		
Asp	Asp	Asp	Val	Glu	Asp	Thr	Asp	Val	Arg	Cys	Leu	Val	Arg	Val	Cys
		35				40					45				
Glu	Arg	Pro	Leu	Lys	Cys	Ile	Cys	Lys	Asp	Gly	Tyr	Tyr	Arg	Asn	Lys
		50				55				60					
Lys	Gly	Glu	Cys	Val	Thr	Asp	Asp	Val	Cys	Gln	Glu	Asp	Phe	Met	Glu
65					70				75						80
Phe	Ile	Thr	Phe	Ala	Pro										
					85										

<210> 46  
 <211> 86  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP44

<400> 46

Arg	Pro	Glu	Lys	Lys	Cys	Gly	Pro	Gly	Glu	Arg	Leu	Asp	Cys	Ala	Asn
1				5					10					15	
Lys	Lys	Pro	Cys	Glu	Pro	Lys	Cys	Lys	Ile	Glu	Thr	Ser	Glu	Glu	Glu
			20					25					30		
Asp	Asp	Asp	Val	Glu	Glu	Thr	Asp	Val	Arg	Cys	Leu	Val	Arg	Val	Cys
			35				40					45			
Glu	Arg	Pro	Leu	Lys	Cys	Ile	Cys	Lys	Asp	Gly	Tyr	Tyr	Arg	Asn	Lys
	50					55					60				
Lys	Gly	Glu	Cys	Val	Thr	Asp	Asp	Val	Cys	Gln	Glu	Asp	Phe	Met	Glu
65					70					75					80
Phe	Ile	Thr	Phe	Ala	Pro										
					85										

<210> 47  
 <211> 78  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP 31, 42 and 46

<400> 47

Lys	Ser	Leu	Trp	Asp	Gln	Lys	Cys	Gly	Glu	Asn	Glu	Arg	Leu	Asp	Cys
1				5					10					15	
Gly	Asn	Gln	Lys	Asp	Cys	Glu	Arg	Lys	Cys	Asp	Asp	Lys	Arg	Ser	Glu
			20					25					30		
Glu	Glu	Ile	Met	Gln	Ala	Cys	Leu	Thr	Arg	Gln	Cys	Leu	Pro	Pro	Val
			35				40					45			
Cys	Val	Cys	Glu	Asp	Gly	Phe	Tyr	Arg	Asn	Asp	Asn	Asp	Gln	Cys	Val
	50					55					60				
Asp	Glu	Glu	Glu	Cys	Asn	Met	Glu	Phe	Ile	Thr	Phe	Ala	Pro		
65					70					75					



<210> 48  
 <211> 89  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AceNAP4d1

<400> 48

Lys	Pro	Asn	Asn	Val	Met	Thr	Asn	Ala	Cys	Gly	Leu	Asn	Glu	Tyr	Phe
1				5					10					15	
Ala	Glu	Cys	Gly	Asn	Met	Lys	Glu	Cys	Glu	His	Arg	Cys	Asn	Glu	Glu
			20					25					30		
Glu	Asn	Glu	Glu	Arg	Asp	Glu	Glu	Arg	Ile	Thr	Ala	Cys	Leu	Ile	Arg
			35				40					45			
Val	Cys	Phe	Arg	Pro	Gly	Ala	Cys	Val	Cys	Lys	Asp	Gly	Phe	Tyr	Arg
	50				55					60					
Asn	Arg	Thr	Gly	Ser	Cys	Val	Glu	Glu	Asp	Asp	Cys	Glu	Tyr	Glu	Asn
65					70				75					80	
Met	Glu	Phe	Ile	Thr	Phe	Ala	Pro	Glu							
					85										

<210> 49  
 <211> 82  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AceNAP4d2

<400> 49

Val	Pro	Ile	Cys	Gly	Ser	Asn	Glu	Arg	Tyr	Ser	Asp	Cys	Gly	Asn	Asp
1				5					10					15	
Lys	Gln	Cys	Glu	Arg	Lys	Cys	Asn	Glu	Asp	Asp	Tyr	Glu	Lys	Gly	Asp
			20					25					30		
Glu	Ala	Cys	Arg	Ser	His	Val	Cys	Glu	Arg	Pro	Gly	Ala	Cys	Val	Cys
			35				40					45			
Glu	Asp	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Ser	Cys	Val	Glu	Ser	Asp
	50				55					60					
Asp	Cys	Glu	Tyr	Asp	Asn	Met	Asp	Phe	Ile	Thr	Phe	Ala	Pro	Glu	Thr
65					70				75					80	
Ser	Arg														

<210> 50  
 <211> 84  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP45d1

<400> 50

Lys	Ser	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Lys	Leu	Asp	Cys	Gly	Asn
1				5					10					15	
Leu	Lys	Ala	Cys	Glu	Lys	Lys	Cys	Ser	Asp	Leu	Asp	Asn	Glu	Glu	Asp
			20					25					30		
Tyr	Lys	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ser	Arg
		35					40					45			
Arg	Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Gln
	50				55						60				
Cys	Val	Thr	Arg	Asp	Asp	Cys	Glu	Tyr	Asp	Asn	Met	Glu	Ile	Ile	Thr
65					70					75					80
Phe	Pro	Pro	Glu												

<210> 51  
 <211> 84  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP47d1

<400> 51

Lys	Ser	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Lys	Leu	Asp	Cys	Gly	Asn
1				5					10					15	
Leu	Lys	Ala	Cys	Glu	Lys	Lys	Cys	Ser	Asp	Leu	Asp	Asn	Glu	Glu	Asp
			20					25					30		
Tyr	Gly	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ile	Gly
		35					40					45			
Arg	Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Gln
	50				55						60				
Cys	Val	Thr	Arg	Asp	Asp	Cys	Glu	Tyr	Asp	Asn	Met	Glu	Ile	Ile	Thr
65					70					75					80
Phe	Pro	Pro	Glu												

<210> 52  
 <211> 83  
 <212> PRT  
 <213> Ancylostoma duodenale

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature  
 AduNAP7d1 and AduNAP4d1

<400> 52

Lys	Ala	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Arg	Leu	Asp	Cys	Gly	Asn
1				5					10					15	
Leu	Lys	Gln	Cys	Glu	Pro	Lys	Cys	Ser	Asp	Leu	Glu	Ser	Glu	Glu	Tyr
			20					25					30		
Glu	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ser	Arg	Arg
			35				40					45			
Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Lys	Cys
	50					55					60				
Val	Ala	Lys	Asp	Val	Cys	Glu	Asp	Asp	Asn	Met	Glu	Ile	Ile	Thr	Phe
65					70					75					80
Pro	Pro	Glu													

<210> 53  
 <211> 78  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223>

<400> 53

Asp	Lys	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Trp	Cys	Gly	Thr	Tyr	Lys
1				5					10					15	
Gln	Cys	Glu	Arg	Lys	Cys	Asn	Lys	Glu	Leu	Ser	Glu	Lys	Asp	Glu	Glu
			20					25					30		
Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	Val	Cys	Asn	Asp
			35				40					45			
Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Glu	Lys	Asp	Glu	Cys
	50					55					60				
Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys	His		
65					70					75					

<210> 54  
 <211> 78  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP47d2

<400> 54

Asp	Lys	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Trp	Cys	Gly	Thr	Tyr	Lys
1				5					10					15	
Gln	Cys	Glu	Arg	Lys	Cys	Ser	Glu	Glu	Leu	Ser	Glu	Lys	Asn	Glu	Glu
			20					25					30		
Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	Val	Cys	Asn	Asp
		35					40					45			
Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Glu	Lys	Asp	Glu	Cys
	50				55						60				
Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys	His		
65					70					75					

<210> 55  
 <211> 77  
 <212> PRT  
 <213> Ancylostoma duodenale

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AduNAP4

<400> 55

Lys	Cys	Pro	Thr	Asp	Glu	Trp	Phe	Asp	Trp	Cys	Gly	Thr	Tyr	Lys	His
1				5					10					15	
Cys	Glu	Leu	Lys	Cys	Asp	Arg	Glu	Leu	Thr	Glu	Lys	Glu	Glu	Gln	Ala
			20					25					30		
Cys	Leu	Ser	Arg	Val	Cys	Glu	Lys	Ser	Ala	Cys	Val	Cys	Asn	Asp	Gly
		35					40					45			
Leu	Tyr	Arg	Asp	Lys	Phe	Gly	Asn	Cys	Val	Glu	Lys	Asp	Glu	Cys	Asn
	50				55						60				
Asp	Met	Glu	Ile	Ile	Thr	Phe	Ala	Pro	Glu	Glu	Thr	Lys			
65					70					75					

<210> 56  
 <211> 78  
 <212> PRT  
 <213> Ancylostoma duodenale

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AduNAP7d2

<400> 56

Asp	Glu	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Tyr	Cys	Gly	Asn	Tyr	Lys
1				5				10					15		
Lys	Cys	Glu	Arg	Lys	Cys	Ser	Glu	Glu	Thr	Ser	Glu	Lys	Asn	Glu	Glu
			20					25					30		
Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	Val	Cys	Lys	Asp
			35				40					45			
Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Pro	His	Asp	Glu	Cys
			50			55				60					
Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys	His		
65					70					75					

<210> 57  
 <211> 75  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AceNAP5

<400> 57

Lys	Ala	Phe	Pro	Lys	Cys	Asp	Val	Asn	Glu	Arg	Phe	Glu	Val	Cys	Gly
1				5				10					15		
Asn	Leu	Lys	Glu	Cys	Glu	Leu	Lys	Cys	Asp	Glu	Asp	Pro	Lys	Ile	Cys
			20					25					30		
Ser	Arg	Ala	Cys	Ile	Arg	Pro	Pro	Ala	Cys	Val	Cys	Asp	Asp	Gly	Phe
			35				40					45			
Tyr	Arg	Asp	Lys	Tyr	Gly	Phe	Cys	Val	Glu	Glu	Asp	Glu	Cys	Asn	Asp
			50			55					60				
Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys					
65					70					75					

<210> 58  
 <211> 77  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AceNAP7

<400> 58

Arg	Thr	Val	Lys	Lys	Cys	Gly	Lys	Asn	Glu	Arg	Tyr	Asp	Asp	Cys	Gly
1				5					10					15	
Asn	Ala	Lys	Asp	Cys	Glu	Thr	Lys	Cys	Gly	Glu	Glu	Glu	Lys	Val	Cys
			20					25					30		
Arg	Ser	Arg	Glu	Cys	Thr	Ser	Pro	Gly	Ala	Cys	Val	Cys	Glu	Gln	Gly
		35				40					45				
Phe	Tyr	Arg	Asp	Pro	Ala	Gly	Asp	Cys	Val	Thr	Asp	Glu	Glu	Cys	Asp
	50					55				60					
Glu	Trp	Asn	Asn	Met	Glu	Ile	Ile	Thr	Met	Pro	Lys	Gln			
65					70				75						

<210> 59  
 <211> 84  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature AcaNAP2

<400> 59

Lys	Ala	Thr	Met	Gln	Cys	Gly	Glu	Asn	Glu	Lys	Tyr	Asp	Ser	Cys	Gly
1				5					10					15	
Ser	Lys	Glu	Cys	Asp	Lys	Lys	Cys	Lys	Tyr	Asp	Gly	Val	Glu	Glu	Glu
			20					25					30		
Asp	Asp	Glu	Glu	Pro	Asn	Val	Pro	Cys	Leu	Val	Arg	Val	Cys	His	Gln
		35				40					45				
Asp	Cys	Val	Cys	Glu	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Asp	Asp	Lys	Cys
	50					55				60					
Val	Ser	Ala	Glu	Asp	Cys	Glu	Leu	Asp	Asn	Met	Asp	Phe	Ile	Tyr	Pro
65					70				75					80	
Gly	Thr	Arg	Asn												

<210> 60  
 <211> 58  
 <212> PRT  
 <213> Heligmosomoides polygyrus  
 <220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature HpoNAP5

<400> 60

Lys	Thr	Cys	Gly	Pro	Asn	Glu	Glu	Tyr	Thr	Glu	Cys	Gly	Thr	Pro	Cys
1				5				10						15	
Glu	Pro	Lys	Cys	Asn	Glu	Pro	Met	Pro	Asp	Ile	Cys	Thr	Leu	Asn	Cys
		20					25					30			
Ile	Val	Asn	Val	Cys	Gln	Cys	Lys	Pro	Gly	Phe	Lys	Arg	Gly	Pro	Lys
	35					40					45				
Gly	Cys	Val	Ala	Pro	Gly	Pro	Gly	Cys	Lys						
	50					55									

<210> 61  
 <211> 61  
 <212> PRT  
 <213> Necator americanus

<220>  
 <221> misc\_feature  
 <223> Alignment of amino acid sequences to mature NamNAP

<400> 61

Lys	Arg	Asp	Cys	Pro	Ala	Asn	Glu	Glu	Trp	Arg	Glu	Cys	Gly	Thr	Pro
1				5				10						15	
Cys	Glu	Pro	Lys	Cys	Asn	Gln	Pro	Met	Pro	Asp	Ile	Cys	Thr	Met	Asn
		20					25					30			
Cys	Ile	Val	Asp	Val	Cys	Gln	Cys	Lys	Glu	Gly	Tyr	Lys	Arg	His	Glu
	35					40					45				
Thr	Lys	Gly	Cys	Leu	Lys	Glu	Gly	Ser	Ala	Asp	Cys	Lys			
	50				55					60					

<210> 62  
 <211> 171  
 <212> PRT  
 <213> Ancylostoma ceylanicum

<400> 62

Lys	Pro	Asn	Asn	Val	Met	Thr	Asn	Ala	Cys	Gly	Leu	Asn	Glu	Tyr	Phe
1				5				10						15	
Ala	Glu	Cys	Gly	Asn	Met	Lys	Glu	Cys	Glu	His	Arg	Cys	Asn	Glu	Glu
		20					25					30			
Glu	Asn	Glu	Glu	Arg	Asp	Glu	Glu	Arg	Ile	Thr	Ala	Cys	Leu	Ile	Arg
	35					40					45				

Val	<del>Cys</del>	Phe	Arg	Pro	Gly	Ala	Cys	Val	Cys	Lys	Asp	Gly	Phe	Tyr	Arg
50						55					60				
Asn	Arg	Thr	Gly	Ser	Cys	Val	Glu	Glu	Asp	Asp	Cys	Glu	Tyr	Glu	Asn
65					70				75						80
Met	Glu	Phe	Ile	Thr	Phe	Ala	Pro	Glu	Val	Pro	Ile	Cys	Gly	Ser	Asn
				85				90						95	
Glu	Arg	Tyr	Ser	Asp	Cys	Gly	Asn	Asp	Lys	Gln	Cys	Glu	Arg	Lys	Cys
			100					105					110		
Asn	Glu	Asp	Asp	Tyr	Glu	Lys	Gly	Asp	Glu	Ala	Cys	Arg	Ser	His	Val
		115					120					125			
Cys	Glu	Arg	Pro	Gly	Ala	Cys	Val	Cys	Glu	Asp	Gly	Phe	Tyr	Arg	Asn
	130					135					140				
Lys	Lys	Gly	Ser	Cys	Val	Glu	Ser	Asp	Asp	Cys	Glu	Tyr	Asp	Asn	Met
145					150					155					160
Asp	Phe	Ile	Thr	Phe	Ala	Pro	Glu	Thr	Ser	Arg					
				165						170					

<210> 63  
 <211> 162  
 <212> PRT  
 <213> Ancylostoma caninum

<400> 63

Lys	Ser	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Lys	Leu	Asp	Cys	Gly	Asn
1			5						10					15	
Leu	Lys	Ala	Cys	Glu	Lys	Lys	Cys	Ser	Asp	Leu	Asp	Asn	Glu	Glu	Asp
			20					25					30		
Tyr	Lys	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ser	Arg
			35				40					45			
Arg	Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Gln
	50					55					60				
Cys	Val	Thr	Arg	Asp	Asp	Cys	Glu	Tyr	Asp	Asn	Met	Glu	Ile	Ile	Thr
65				70						75					80
Phe	Pro	Pro	Glu	Asp	Lys	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Trp	Cys
				85					90					95	
Gly	Thr	Tyr	Lys	Gln	Cys	Glu	Arg	Lys	Cys	Asn	Lys	Glu	Leu	Ser	Glu
			100					105					110		
Lys	Asp	Glu	Glu	Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys
		115					120					125			
Val	Cys	Asn	Asp	Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Glu
	130					135					140				
Lys	Asp	Glu	Cys	Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr
145					150					155					160
Lys	His														



<210> 64  
 <211> 162  
 <212> PRT  
 <213> Ancylostoma caninum

<400> 64

Lys	Ser	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Lys	Leu	Asp	Cys	Gly	Asn
1			5					10						15	
Leu	Lys	Ala	Cys	Glu	Lys	Lys	Cys	Ser	Asp	Leu	Asp	Asn	Glu	Glu	Asp
		20					25					30			
Tyr	Gly	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ile	Gly
	35					40					45				
Arg	Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Gln
	50				55					60					
Cys	Val	Thr	Arg	Asp	Asp	Cys	Glu	Tyr	Asp	Asn	Met	Glu	Ile	Ile	Thr
65				70				75						80	
Phe	Pro	Pro	Glu	Asp	Lys	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Trp	Cys
			85				90						95		
Gly	Thr	Tyr	Lys	Gln	Cys	Glu	Arg	Lys	Cys	Ser	Glu	Glu	Leu	Ser	Glu
	100						105					110			
Lys	Asn	Glu	Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	
	115				120					125					
Val	Cys	Asn	Asp	Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Glu
	130				135					140					
Lys	Asp	Glu	Cys	Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr
145				150						155				160	
Lys	His														

<210> 65  
 <211> 161  
 <212> PRT  
 <213> Ancylostoma duodenale

<400> 65

Lys	Ala	Ala	Lys	Lys	Cys	Gly	Leu	Asn	Glu	Arg	Leu	Asp	Cys	Gly	Asn
1			5					10						15	
Leu	Lys	Gln	Cys	Glu	Pro	Lys	Cys	Ser	Asp	Leu	Glu	Ser	Glu	Glu	Tyr
		20					25					30			
Glu	Glu	Glu	Asp	Glu	Ser	Lys	Cys	Arg	Ser	Arg	Glu	Cys	Ser	Arg	Arg
	35					40					45				
Val	Cys	Val	Cys	Asp	Glu	Gly	Phe	Tyr	Arg	Asn	Lys	Lys	Gly	Lys	Cys
	50				55					60					
Val	Ala	Lys	Asp	Val	Cys	Glu	Asp	Asp	Asn	Met	Glu	Ile	Ile	Thr	Phe
65				70				75						80	
Pro	Pro	Glu	Asp	Glu	Cys	Gly	Pro	Asp	Glu	Trp	Phe	Asp	Tyr	Cys	Gly
			85					90						95	

Asn	Tyr	Lys	Lys	Cys	Glu	Arg	Lys	Cys	Ser	Glu	Glu	Thr	Ser	Glu	Lys
		100						105					110		
Asn	Glu	Glu	Ala	Cys	Leu	Ser	Arg	Ala	Cys	Thr	Gly	Arg	Ala	Cys	Val
		115					120				125				
Cys	Lys	Asp	Gly	Leu	Tyr	Arg	Asp	Asp	Phe	Gly	Asn	Cys	Val	Pro	His
	130					135				140					
Asp	Glu	Cys	Asn	Asp	Met	Glu	Ile	Ile	Thr	Phe	Pro	Pro	Glu	Thr	Lys
145					150					155					160
His															

<210> 66  
 <211> 9  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Xaa in locations 2 to 9 is any amino acid

<400> 66

Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1					5			

<210> 67  
 <211> 9  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Xaa in locations 2 to 9 is any amino acid

<400> 67

Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1					5			

<210> 68  
 <211> 7  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Xaa in locations 1 and 2 is any amino acid, provided that at least one of Xaa at locations 1 and 2 is Glu or Asp, Xaa in locations 3 to 8 is any amino acid

<400> 68

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5		

<210> 69  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 69

Gly Phe Tyr Arg Asp  
1 5

<210> 70  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 70

Gly Phe Tyr Arg Asn  
1 5

<210> 71  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 71

Gly Tyr Tyr Arg Asp  
1 5

<210> 72  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 72

Gly Try Tyr Arg Asn  
1 5

<210> 73  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 73

Gly Leu Tyr Arg Asp  
1 5

<210> 74  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 74

Glu Ile Ile His Val  
1 5

<210> 75  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 75

Asp Ile Ile Met Val  
1 5

<210> 76  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<400> 76

Phe Ile Thr Phe Ala Pro  
1 5

<210> 77  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<400> 77

Met Glu Ile Ile Thr  
1 5

<210> 78  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 and 2 is any amino acid, provided that at least one  
Xaa is Glu or Asp

<400> 78

Xaa Xaa Gly Phe Tyr Arg Asp  
1 5

<210> 79  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 and 2 is any amino acid, provided that at least one  
Xaa is Glu or Asp

<400> 79

Xaa Xaa Gly Phe Tyr Arg Asn  
1 5

<210> 80  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 and 2 is any amino acid, provided that at least one  
Xaa is Glu or Asp

<400> 80  
Xaa Xaa Gly Tyr Tyr Arg Asp  
1 5

<210> 81  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 and 2 is any amino acid, provided that at least one  
Xaa is Glu or Asp

<400> 81  
Xaa Xaa Gly Tyr Tyr Arg Asn  
1 5

<210> 82  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 and 2 is any amino acid, provided that at least one  
Xaa is Glu or Asp

<400> 82  
Xaa Xaa Gly Leu Tyr Arg Asp  
1 5

<210> 83  
<211> 9  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 2 to 9 is any amino acid

<400> 83

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 84  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 is any amino acid, perferably Leu; Xaa in location  
2 is any amino acid; Xaa in location 3 is any amino acid, perferably Arg; Xaa  
in location 4 is any amino acid

<400> 84

Xaa Xaa Xaa Xaa  
1

<210> 85  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 to 4 is any amino acid

<400> 85

Xaa Xaa Xaa Xaa  
1

<210> 86  
 <211> 9  
 <212> PRT  
 <213> Ancylostoma caninum  
  
 <220>  
 <221> misc\_feature  
 <223> Xaa in locations 1 to 2 is any amino acid  
  
 <400> 86

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5

<210> 87  
 <211> 9  
 <212> PRT  
 <213> Ancylostoma caninum  
  
 <220>  
 <221> misc\_feature  
 <223> Xaa in locations 1 to 2 is any amino acid  
  
 <400> 87

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5

<210> 88  
 <211> 25  
 <212> DNA  
 <213> Ancylostoma caninum  
  
 <400> 88

tcagacatgt ataatctcat gttgg

25

<210> 89  
 <211> 22  
 <212> DNA  
 <213> Ancylostoma caninum  
  
 <220>  
 <221> misc-feature  
 <223> Oligonucleotide primer YG101  
  
 <400> 89

aaggcatacc cggagtgtgc tg

22



<210> 90  
<211> 21  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Xaa in locations 1 to 2 is any amino acid  
  
<400> 90

aarcntgyg armggaartg y

21

<210> 91  
<211> 23  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> "w" stands for a or t; "r" stands for a of g; "n" stands for any  
base; and "y" stands for c or t.

<400> 91

twrwancnt cyttreanac rca

23

<210> 92  
 <211> 13  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> N-terminus

<400> 92

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp Leu Asp  
 1 5 10

<210> 93  
 <211> 11  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> N-terminus

<400> 93

Lys Ala Tyr Pro Glu Cys Gly Glu Asn Glu Trp  
 1 5 10

<210> 94  
 <211> 33  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> "r" stands for a or g; "n" stands for inosine; "y" stands for c or t

<400> 94

aargcntayc cngartgygg ngaraaygar tgg

33

<210> 95  
 <211> 28  
 <212> DNA  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Oligonucleotide primer

<400> 95

aattcgcggc cgcttttttt tttttttt

28

<210> 96  
 <211> 24  
 <212> DNA  
 <213> Ancylostoma caninum

<400> 96

ggtggcgacg actcctggag cccg

24

<210> 97  
 <211> 20  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> N-terminal fragment

<400> 97

Gys	Ala	Tyr	Pro	Glu	Cys	Gly	Glu	Asn	Glu	Tip	Leu	Asp	Asp	Cys	Gly	Thr
1				5				10						15		
Gln	Lys	Pro														
		20														

<210> 98  
<211> 10  
<212> DNA  
<213> Ancylostoma caninum

<400> 98

cggaattccg

10

<210> 99  
<211> 18  
<212> DNA  
<213> Ancylostoma caninum

<400> 99

tggcctagcg tcaggagt

18

<210> 100  
<211> 18  
<212> DNA  
<213> Ancylostoma caninum

<400> 100

cctgacgcta ggccatgg

18

<210> 101  
<211> 24  
<212> DNA  
<213> Ancylostoma caninum

<400> 101

agcggataac aatttcacac agga

24

<210> 102  
<211> 66  
<212> DNA  
<213> Ancylostoma caninum

<400> 102

atgttctctc caattttgtc cttggaaatt attttagctt tggctacttt gcaatctgtc 60  
ttcgct 66

<210> 103  
<211> 57  
<212> DNA  
<213> Ancylostoma caninum

<400> 103

cagccaggtta tctccactac cgttggttcc gctgccgagg gttctttgga caagagg 57

<210> 104  
<211> 51  
<212> DNA  
<213> Ancylostoma caninum

<400> 104

cctatccgcg gaattcagat ctgaatgcgg ccgctcgaga ctagtggatc c 51

<210> 105  
<211> 41  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer YG103

<400> 105

gctcgctcta gaagcttcag acatgtataa tctcatgttg g 41

<210> 106  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Amino-terminous

<400> 106

Lys Ala Tyr Pro Glu  
1 5

<210> 107  
<211> 36  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer YG102

<400> 107

gaccagtcta gacaatgaag atgctttacg ctatcg

36

<210> 108  
<211> 23  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Amino-terminous YG60

<400> 108

gtgggagacc tgatactctc aag

23

<210> 109  
<211> 9  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> N-terminal fragment

<400> 109

Arg Thr Val Arg Lys Ala Tyr Pro Glu  
1 5

<210> 110  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> N-terminal fragment

<400> 110

Arg Thr Val Arg Lys  
1 5

<210> 111  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pDONG vector amplified PCR primer  
fragment

<400> 111

atccgaagct ttgctaacat actgcgtaat aag

33

<210> 112  
<211> 60  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pDONG vector amplified PCR primer  
fragment

<400> 112

tatgggatgg ccgacttggc ctccgcctga gcctccacct ttatcccaat ccaaataaga 60

<210> 113  
<211> 60  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pDONG vector amplified PCR primer  
fragment

<400> 113

atgggatggc cgacttggcc ctccgcctga gcctccacct ttatcccaat ccaaataaga 60

<210> 114  
<211> 60  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pDONG vector amplified PCR primer  
fragment

<400> 114

tatgggatgg ccgacttggc cgatccgcct gagcctccac ctttatccca atccaaataa 60



<210> 115  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pDONG vector amplified PCR primer  
fragment

<400> 115

aggaggggat ccgcggccgc gtgatatggg atggccgact tggcc 45

<210> 116  
<211> 24  
<212> DNA  
<213> Artifical Sequence

<220>  
<221> misc\_feature  
<223> Description of Artifical Sequence: pUC119 primer

<400> 116

cgccagggtt ttcccagtca cgac 24

<210> 117  
<211> 28  
<212> DNA  
<213> Ancylostoma caninum

<400> 117

gtttcgagtt ccgggatata taaagtcc 28

<210> 118  
<211> 7  
<212> PRT  
<213>

<220>  
<221> misc\_feature  
<223> Xaa in location 5 is Arg, Pro or Lys

<400> 118

Lys Pro Cys Glu Xaa Lys Cys  
1 5

<210> 119  
<211> 8  
<212> PRT  
<213> Necator americanus

<220>  
<221> misc\_feature  
<223> Xaa in location 2 is Val, Ile or Gln; Xaa in location 4 is Lys, Asp,  
Glu or Gln; Xaa in location 5 is Asp or Glu; Xaa in location 7 is Phe or Tyr

<400> 119

Cys Xaa Cys Xaa Xaa Gly Xaa Tyr  
1 5

<210> 120  
<211> 44  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 120

gaccagtcta gaccacatg gcggtgcttt attcagtagc aata

44

<210> 121  
<211> 40  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 121

gctcgctcta gattatcgtg aggtttctgg tgcaaaaagtg

40

<210> 122  
<211> 24  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 122

aaagcaacga tgcagtgtgg tgag

24

<210> 123  
<211> 47  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 123

gctcgctcta gaagcttcag ttctgagttc cgggatatat aaagtcc

47

<210> 124  
<211> 30  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 124

gagactttta aatcactgtc ggatcagaag

30

<210> 125  
<211> 33  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 125

ttcaggacta gttcatgggtg cgaaagtaat aaa

33

<210> 126  
<211> 28  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 126

gcgttttaaag caacgatgca gtgtgggtg

28

<210> 127  
<211> 46  
<212> DNA  
<213> Ancylostoma caninum

<220>  
<221> misc\_feature  
<223> Oligonucleotide primer

<400> 127

cgctctagaa gtttcatggg tttcgagttc coggatatat aaagtc

46

<210> 128  
 <211> 91  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> misc\_feature  
 <223> Alignment of AcaNAPc2

<400> 128

Leu	Val	Sar	Tyr	Cys	Ser	Gly	Lys	Ala	Thr	Met	Gln	Cys	Gly	Glu	Asn
1				5					10					15	
Glu	Lys	Tyr	Asp	Ser	Cys	Gly	Ser	Lys	Glu	Cys	Asp	Lys	Lys	Cys	Lys
			20					25					30		
Tyr	Asp	Gly	Val	Glu	Glu	Glu	Asp	Asp	Glu	Glu	Pro	Asn	Val	Pro	Cys
			35				40					45			
Leu	Val	Arg	Val	Cys	His	Gln	Asp	Cys	Val	Cys	Glu	Glu	Gly	Phe	Tyr
	50					55					60				
Arg	Asn	Lys	Asp	Asp	Lys	Cys	Val	Ser	Ala	Glu	Asp	Cys	Glu	Leu	Asp
65					70					75					80
Asn	Met	Asp	Phe	Ile	Tyr	Pro	Gly	Thr	Arg	Asn					
				85					90						

<210> 129  
 <211> 8  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> Internal fragment  
 <223> Xaa in locations 2 to 8 is any amino acid

<400> 129

Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5			

<210> 130  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 130

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 131  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 5 is any amino acid

<400> 131

Cys Xaa Xaa Xaa Xaa Cys  
1 5

<210> 132  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 132

Cys Xaa Xaa Xaa Cys  
1 5

<210> 133  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and 3 is any amino acid

<400> 133

Cys Xaa Xaa Cys  
1

<210> 134  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 21 is any amino acid

<400> 134

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 135  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 20 is any amino acid

<400> 135

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 136  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 19 is any amino acid

<400> 136

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 137  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 18 is any amino acid

<400> 137

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 138  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 17 is any amino acid

<400> 138

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa



<210> 139  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 16 is any amino acid

<400> 139

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 140  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 15 is any amino acid

<400> 140

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 141  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 14 is any amino acid

<400> 141

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 142  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 13 is any amino acid

<400> 142

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 143  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 12 is any amino acid

<400> 143

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 144  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 11 is any amino acid

<400> 144

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 145  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and 5 to 10 is any amino acid

<400> 145

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 146  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 146

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 147  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 147

Cys Xaa Xaa Xaa  
1

<210> 148  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 148

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 149  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 149

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 150  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 150

Cys Xaa Xaa Xaa  
1

<210> 151  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and 4 is any amino acid

<400> 151

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 152  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 14 is any amino acid

<400> 152

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 153  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 13 is any amino acid

<400> 153

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 154  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and 7 is any amino acid

<400> 154

Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 155  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 155

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 156  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 156

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 157  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 157

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 158  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 158

Cys Xaa Xaa Xaa Xaa Cys  
1 5

<210> 159  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 159

Cys Xaa Xaa Xaa Cys  
1 5

<210> 160  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 23 is any amino acid

<400> 160

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 161  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 22 is any amino acid

<400> 161

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa  
20



<210> 162  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 21 is any amino acid  
  
<400> 162

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa Xaa Xaa Xaa Xaa  
20

<210> 163  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 20 is any amino acid  
  
<400> 163

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa Xaa Xaa Xaa  
20

<210> 164  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 19 is any amino acid  
  
<400> 164

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa Xaa Xaa

<210> 165  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 18 is any amino acid

<400> 165

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa Xaa

<210> 166  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 17 is any amino acid

<400> 166

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa

<210> 167  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 16 is any amino acid

<400> 167

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

<210> 168  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 15 is any amino acid  
  
<400> 168

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1			5					10					15	

<210> 169  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 14 is any amino acid  
  
<400> 169

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1			5					10						

<210> 170  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 13 is any amino acid  
  
<400> 170

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1			5					10						

<210> 171  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 12 is any amino acid

<400> 171

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 172  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 11 is any amino acid

<400> 172

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 173  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 10 is any amino acid

<400> 173

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 174  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 174

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 175  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 175

Cys Xaa Xaa Xaa  
1

<210> 176  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220> Internal fragment  
<221> Xaa in locations 2 to 6 is any amino acid

<400> 176

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 177  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Xaa in locations 2 to 5 is any amino acid  
<223> Internal fragment

<400> 177

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 178  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 178

Cys Xaa Xaa Xaa  
1

<210> 179  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 15 is any amino acid

<400> 179

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 180  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 14 is any amino acid

<400> 180

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 181  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 181

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 182  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 182

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 183  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 183

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 184  
<211> 26  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 26 is any amino acid

<400> 184

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 185  
<211> 25  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 25 is any amino acid

<400> 185

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25



<210> 186  
<211> 24  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 24 is any amino acid

<400> 186

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 187  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 23 is any amino acid

<400> 187

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 188  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 22 is any amino acid

<400> 188

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 189  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 21 is any amino acid

<400> 189

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 190  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 20 is any amino acid

<400> 190

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 191  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 19 is any amino acid

<400> 191

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 192  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 18 is any amino acid

<400> 192

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 193  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 17 is any amino acid

<400> 193

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa

<210> 194  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 16 is any amino acid

<400> 194

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 195  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 15 is any amino acid

<400> 195

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 196  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 14 is any amino acid

<400> 196

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 197  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 13 is any amino acid

<400> 197

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 198  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 12 is any amino acid  
  
<400> 198

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 199  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 11 is any amino acid  
  
<400> 199

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 200  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 10 is any amino acid  
  
<400> 200

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 201  
<211> 9  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 9 is any amino acid

<400> 201

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 202  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 202

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 203  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 203

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 204  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 204

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 205  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 205

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 206  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 206

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 207  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 207

Cys Xaa Xaa Xaa Xaa Cys  
1 5

<210> 208  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 208

Cys Xaa Xaa Xaa Cys  
1 5

<210> 209  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 23 is any amino acid

<400> 209

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa  
20



<210> 210  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 22 is any amino acid  
  
<400> 210

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
  
Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 211  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 21 is any amino acid  
  
<400> 211

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
  
Xaa Xaa Xaa Xaa Xaa  
20

<210> 212  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 20 is any amino acid  
  
<400> 212

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
  
Xaa Xaa Xaa Xaa  
20

<210> 213  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 19 is any amino acid

<400> 213

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					15	

Xaa Xaa Xaa

<210> 214  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 18 is any amino acid

<400> 214

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					15	

Xaa Xaa

<210> 215  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 17 is any amino acid

<400> 215

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					15	

Xaa

<210> 216  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 16 is any amino acid

<400> 216

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 217  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 15 is any amino acid

<400> 217

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 218  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 14 is any amino acid

<400> 218

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 219  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 13 is any amino acid

<400> 219

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 220  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 12 is any amino acid

<400> 220

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 221  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 11 is any amino acid

<400> 221

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 222  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 10 is any amino acid

<400> 222

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 223  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 223

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 224  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 224

Cys Xaa Xaa Xaa  
1

<210> 225  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 225

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 226  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 226

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 227  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 227

Cys Xaa Xaa Xaa  
1

<210> 228  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 and locations 4 to 15 is any amino acid

<400> 228

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 229  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 and locations 4 to 14 is any amino acid

<400> 229

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 230  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 8 is any amino acid

<400> 230

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 231  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 7 is any amino acid

<400> 231

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 232  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 6 is any amino acid

<400> 232

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 233  
<211> 26  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 26 is any amino acid

<400> 233

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25



<210> 234  
<211> 25  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 25 is any amino acid

<400> 234

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 235  
<211> 24  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragmen  
<223> Xaa in location 2 to 24 is any amino acid t

<400> 235

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 236  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 23 is any amino acid

<400> 236

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 237  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 22 is any amino acid  
<400> 237

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 238  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 21 is any amino acid  
<400> 238

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 239  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 20 is any amino acid  
<400> 239

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 240  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 19 is any amino acid

<400> 240

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 241  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 18 is any amino acid

<400> 241

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 242  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 17 is any amino acid

<400> 242

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa

<210> 243  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 to 16 is any amino acid

<400> 243

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 244  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 15 is any amino acid

<400> 244

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 245  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 14 is any amino acid

<400> 245

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 246  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 13 is any amino acid

<400> 246

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 247  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 12 is any amino acid

<400> 247

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 248  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 11 is any amino acid

<400> 248

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 249  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 10 is any amino acid

<400> 249

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 250  
<211> 9  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 9 is any amino acid

<400> 250

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 251  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 251

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 252  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 252

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 253  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 253

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 254  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 254

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 255  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 255

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 256  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 256

Cys Xaa Xaa Xaa Xaa Cys  
1 5

<210> 257  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 257

Cys Xaa Xaa Xaa Cys  
1 5



<210> 258  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 23 is any amino acid

<400> 258

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 259  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 22 is any amino acid

<400> 259

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 260  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 21 is any amino acid

<400> 260

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 261  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 20 is any amino acid

<400> 261

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 262  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 19 is any amino acid

<400> 262

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 263  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 18 is any amino acid

<400> 263

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 264  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 17 is any amino acid

<400> 264

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

Xaa

<210> 265  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 16 is any amino acid

<400> 265

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

<210> 266  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 15 is any amino acid

<400> 266

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15	

<210> 267  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 14 is any amino acid

<400> 267

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 268  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 12 is any amino acid

<400> 268

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 269  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 12 is any amino acid

<400> 269

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 270  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 11 is any amino acid

<400> 270

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 271  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 10 is any amino acid

<400> 271

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 272  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 272

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 273  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 273

Cys Xaa Xaa Xaa  
1

<210> 274  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 274

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 275  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 275

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 276  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 276

Cys Xaa Xaa Xaa  
1

<210> 277  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 15 is any amino acid

<400> 277

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 278  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 14 is any amino acid

<400> 278

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 279  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 and locations 4 to 13 is any amino acid

<400> 279

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 280  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 280

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 281  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 281

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5



<210> 282  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 282

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 283  
<211> 26  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 26 is any amino acid

<400> 283

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 284  
<211> 25  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 25 is any amino acid

<400> 284

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 285  
<211> 24  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 24 is any amino acid

<400> 285

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 286  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 23 is any amino acid

<400> 286

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 287  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 22 is any amino acid

<400> 287

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 288  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 21 is any amino acid

<400> 288

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa  
20

<210> 289  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 20 is any amino acid

<400> 289

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa  
20

<210> 290  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 19 is any amino acid

<400> 290

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 291  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 18 is any amino acid

<400> 291

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 292  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 17 is any amino acid

<400> 292

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa

<210> 293  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 16 is any amino acid

<400> 293

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 294  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 15 is any amino acid

<400> 294

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 295  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 14 is any amino acid

<400> 295

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 296  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 13 is any amino acid

<400> 296

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 297  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 12 is any amino acid

<400> 297

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 298  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 11 is any amino acid

<400> 298

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 299  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 10 is any amino acid

<400> 299

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 300  
<211> 9  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 9 is any amino acid

<400> 300

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1

5

<210> 301  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 301

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 302  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 302

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 303  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 303

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 304  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 304

Cys Xaa Xaa Xaa Xaa  
1 5



<210> 305  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 305

Cys Xaa Xaa Xaa  
1

<210> 306  
<211> 3  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 3 is any amino acid

<400> 306

Cys Xaa Xaa  
1

<210> 307  
<211> 2  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 2 is any amino acid

<400> 307

Cys Xaa  
1

<210> 308  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 308

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 309  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 309

Cys Xaa Xaa Xaa Xaa Xaa Cys  
1 5

<210> 310  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 310

Cys Xaa Xaa Xaa Xaa Cys  
1 5

<210> 311  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 311

Cys Xaa Xaa Xaa Cys  
1 5

<210> 312  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 23 is any amino acid

<400> 312

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 313  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 22 is any amino acid

<400> 313

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 314  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220> Internal fragment  
<221> Xaa in locations 1 to 3 and locations 5 to 21 is any amino acid

<400> 314

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 315  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 20 is any amino acid

<400> 315

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 316  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 19 is any amino acid

<400> 316

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 317  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 18 is any amino acid

<400> 317

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 318  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 17 is any amino acid

<400> 318

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa

<210> 319  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 16 is any amino acid

<400> 319

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 320  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 15 is any amino acid  
  
<400> 320

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10						15

<210> 321  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 14 is any amino acid  
  
<400> 321

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					

<210> 322  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 13 is any amino acid  
  
<400> 322

Xaa	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10				

<210> 323  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 12 is any amino acid  
  
<400> 323

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 324  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 11 is any amino acid  
  
<400> 324

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 325  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 1 to 3 and locations 5 to 10 is any amino acid  
  
<400> 325

Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 326  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 326

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 327  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 327

Cys Xaa Xaa Xaa  
1

<210> 328  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 328

Cys Xaa Xaa Xaa Xaa Xaa  
1 5



<210> 329  
<211> 5  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 5 is any amino acid

<400> 329

Cys Xaa Xaa Xaa Xaa  
1 5

<210> 330  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 330

Cys Xaa Xaa Xaa  
1

<210> 331  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 and locations 4 to 15 is any amino acid

<400> 331

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 332  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in location 2 and locations 4 to 14 is any amino acid

<400> 332

Cys Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 333  
<211> 8  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 8 is any amino acid

<400> 333

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 334  
<211> 7  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 7 is any amino acid

<400> 334

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 335  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 335

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 336  
<211> 26  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 26 is any amino acid

<400> 336

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 337  
<211> 25  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<223> Internal fragment  
<221> Xaa in locations 2 to 25 is any amino acid

<400> 337

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25

<210> 338  
<211> 24  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 24 is any amino acid

<400> 338

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 339  
<211> 23  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 23 is any amino acid

<400> 339

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 340  
<211> 22  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 22 is any amino acid

<400> 340

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 341  
<211> 21  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 21 is any amino acid

<400> 341

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa  
20

<210> 342  
<211> 20  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 20 is any amino acid

<400> 342

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa  
20

<210> 343  
<211> 19  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 19 is any amino acid

<400> 343

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa

<210> 344  
<211> 18  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 18 is any amino acid

<400> 344

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa

<210> 345  
<211> 17  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 17 is any amino acid

<400> 345

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa

<210> 346  
<211> 16  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 16 is any amino acid

<400> 346

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 347  
<211> 15  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 15 is any amino acid

<400> 347

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

<210> 348  
<211> 14  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 14 is any amino acid

<400> 348

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 349  
<211> 13  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 13 is any amino acid

<400> 349

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 350  
<211> 12  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 12 is any amino acid  
<400> 350

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 351  
<211> 11  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 11 is any amino acid  
<400> 351

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10

<210> 352  
<211> 10  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 10 is any amino acid  
<400> 352

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10



1

<210> 353  
 <211> 9  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> Internal fragment  
 <223> Xaa in locations 2 to 9 is any amino acid

<400> 353

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5

<210> 354  
 <211> 8  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> Internal fragment  
 <223> Xaa in locations 2 to 8 is any amino acid

<400> 354

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5

<210> 355  
 <211> 7  
 <212> PRT  
 <213> Ancylostoma caninum

<220>  
 <221> Internal fragment  
 <223> Xaa in locations 2 to 7 is any amino acid

<400> 355

Cys Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5

<210> 356  
<211> 6  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 6 is any amino acid

<400> 356

Cys Xaa Xaa Xaa Xaa Xaa  
1 5

<210> 357  
<211> 4  
<212> PRT  
<213> Ancylostoma caninum

<220>  
<221> Internal fragment  
<223> Xaa in locations 2 to 4 is any amino acid

<400> 357

Leu Xaa Arg Xaa  
1